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A REVISION OF THE ROVE BEETLE TRIBE FALAGRIINI OF AMERICA NORTH OF MEXICO (COLEOPTERA: STAPHYLINIDAE: ALEOCHARINAE)

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Abstract.—The species of the tribe Falagriini (Staphylinidae: Aleocharinae) of America north of Mexico are revised. Twenty-two species, representing nine genera, are recognized. Included in this total are three new species (type localities in parentheses): *Myrmecocephalus sculpturatus* (Cochise County, Arizona, USA), *M. gatineauensis* (Gatineau N. C. C. Park, Quebec, CANADA) and *Falagrioma socorroensis* (Socorro County, New Mexico, USA). One European species is reported for the first time from North America: *Falagria sulcata* (Paykull). The following species names are placed in synonymy: *Chitalia granulosa* Casey and *Chitalia illustris* Casey [=*Aleodorus scutellaris* (LeConte)]; *Lorinota bilimbata* Casey [=*Myrmecocephalus concinnus* (Erichson)]; and *Lorinota parva* Casey [=*Myrmecocephalus gracilis* (Casey)]. The genus group name *Omoschema* Notman is placed in synonymy with *Lissagria* Casey thus creating a new combination for the name *laticeps* Notman. Usage of the genus group name *Myrmecocephalus* MacLeay is briefly discussed. The following species names, previously considered to be junior synonyms, herein are recognized as valid: *Lorinota gracilis* Casey and *Lorinota pinalica* Casey (both now placed in *Myrmecocephalus*); and *Falagria scutellaris* LeConte (now placed in *Aleodorus*). The generic group names *Falagrioma* Casey and *Leptagria* Casey are also removed from synonymy (both with *Anaulacaspis* Ganglbauer). A neotype is designated for *Aleochara bilobata* Say and lectotypes are designated (when necessary) for the species described from America north of Mexico by Bernhauer, Casey, Erichson and LeConte. *Myrmecopora* Saulcy is excluded from the Falagriini.

Adults of all twenty-two species are described or redescribed. The male genitalia, female spermatheca, and other structures are illustrated with scanning electron photomicrographs and standard macro- and microphotographs. The distribution of each species in America north of Mexico is recorded and mapped, based on specimens examined. Diagnostic keys are provided for all genera and species occurring in America north of Mexico. Proposed phylogenetic relationships among the North American genera are presented and discussed. A checklist of genera and species of North American Falagriini is added.

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This paper is the first of a proposed series in which I plan to revise the genera and species of the Falagriini of the Western Hemisphere. The tribe Falagriini (sensu Seevers, 1978, in part) is cosmopolitan in distribution; there are over 215 species, representing at least 10 genera, recorded in the *Coleopterorum Catalogus* (Bernhauer and Scheerpeltz, 1926) and subsequent issues of *Zoological Record* (through 1979). In America north of Mexico the tribe is comprised of 9 genera and 22 species. Three species, representing 2 genera, herein are described as new.

The North American species of the tribe have been revised only once, by Casey in 1906. Unfortunately, his work now is antiquated and of no practical use in identifying the majority of the species. Since Casey, no attempt has been made to review the group. Recently published papers include descriptions of new taxa, and a few additional papers have presented keys to the world genera (Fenyes, 1912; Notman, 1920).

The present study is based entirely on the examination of adult specimens. The traditional morphological characters of the tribe have been thoroughly re-studied and all other available information on morphology, bionomics, geographical distribution, and phylogeny has been incorporated. In addition, the first detailed examination of male and female genitalia has been undertaken.

In America north of Mexico the Falagriini comprise a heterogeneous group of genera. Various taxa (i.e., *Lissagria, Leptagria, Falagrioma* and *Myrmecocephalus*) have been regarded at one time as subgenera of the once large genus *Falagria* Leach, but herein are recognized as distinct genera. The genus *Myrmecopora* Saulcy, historically regarded as a member of the Falagriini, does not belong to the tribe, and is excluded from this study; its placement remains unresolved at present, but it may prove closely aligned to the genus *Gnypeta* Thomson and related taxa of the Tachyusae (Oxypodini).

TAXONOMIC HISTORY

Although numerous papers have been published with descriptions of new species, few contribute to overall knowledge of North American Falagriini. Only the larger, more important papers are discussed below.

LeConte (1866) described 7 new North American species of the genus *Falagria,* and provided a key to these and 3 previously described species. Two of his species (*vaga* and *cavipennis*) are now assigned to genera excluded from the Falagriini. The remaining 5 species are now assigned to falagriine genera other than *Falagria.*

Casey (1906) produced the first comprehensive study of the North American Falagriini. He proposed 8 new genera, 33 new species, and provided detailed keys to all taxa known from North America. Casey recognized the Falagriae as a subtribe of the Myrmedoniini. Casey described many new species from unique specimens, and in many instances, on the basis of only minor variation; he did not recognize morphological variation within species. Thus, many of Casey's names have been subsequently placed in synonymy.

Fenyes (1912) discussed the genus *Falagria* and its close relatives (excluding the group Tachyusae) in detail. He produced a key to the known world genera, provided a brief diagnosis of each genus, and assigned these genera to the tribe Myrmedoniini.

Notman (1920) gave a synopsis of the genera comprising the Falagriae, also presented a key to the known world genera, and proposed the new genus *Omoschema* based on the new species *laticeps* from Florida.

Also in 1920, Fenyes presented rather detailed descriptions of the world genera of the Aleocharinae, including those of the Falagriae; a checklist of the known world species for each genus was included.

Lohse (1974) proposed changes in the classification of the falagriine taxa. The Myrmedoniini (sensu Bernhauer and Scheerpeltz, 1926) was suppressed, and each of its component taxa (cited as subtribes) were elevated to rank of tribe.

Seevers (1978) incorporated additional changes in the higher classification of the Aleocharinae and provided the following comments on the position of the Falagriini. "In my opinion, the specialized parameres of the male genitalia of the Falagriini clearly set them apart from the Tachyusae. In my revised tribal system, in which the tribe Myrmedoniini is a much more restricted taxon and in which the Falagriini are accorded tribal status, the Tachyusae are assigned to the Oxypodini." Seevers stated that the precedent of classifying the Tachyusae with the Falagriae is unwarranted; the Tachyusae lack the specialized features of the Falagriini.

METHODS AND MATERIALS

This study is based on the examination of over 4,600 specimens on loan from numerous institutions and university collections, obtained by personal collecting, and from private collections of a few individuals.

Specimens were examined with a Wild M-5 binocular microscope. Because of their small size, the majority of the Falagriini are difficult to identify. Accurate identification requires careful examination of dorsal and ventral body surfaces, and the male and female genitalia. To observe the presence or absence of punctures, and the details of surface microsculpture, it is necessary to use high magnification (a minimum of 50×) and an intense light source. A light source directed through a screen of Mylar® film set immediately in front of the specimen provides a diffuse source of lighting and reduces reflection; this allows for close examination of fine surface details not otherwise visible.

Genitalia and terminalia (segments VIII–X) were examined by removing the apex of the abdomen and placing it in warm 10% KOH. After clearing, structures were transferred to small glass genitalia vials containing glycerin (which are then pinned beneath the specimen), mounted in Canada balsam on small acetate strips, or mounted in Hoyer's medium on glass microscope slides. Slide-mounts of mouthparts, and genitalia and associated tergites and sternites were studied with the aid of a Leitz Dialux 20 research microscope. Photographs of these structures were made with an Olympus OM-2n camera mounted on a Wild M20 research microscope. Habitus photographs were made with the Olympus OM-2n mounted on an OM Auto bellows equipped with a Zuiko MC Macro (20 mm, F3.5) lens.

Examination of finer morphological characters was made possible by use of electron microscopy. Whole specimens were cleaned of most dust and debris with a fine camel-hair brush, then glued to the surface of standard SEM aluminum stubs. Specimens were coated with 250–300 Å of gold or gold paladium by a Balvers Union sputter coater. Photographs (4 × 5 Polaroid format) were taken with an AMR (Model 1000A) scanning electron microscope at various magnifications (usually under 250×) and at an accelerating voltage of 20 kV.

Body length was measured from the anterior margin of the head to the apex of the abdomen. Abdominal length may vary greatly because segments are capable of telescoping. For each species, adequate numbers of specimens were measured, when possible, to estimate range in length.

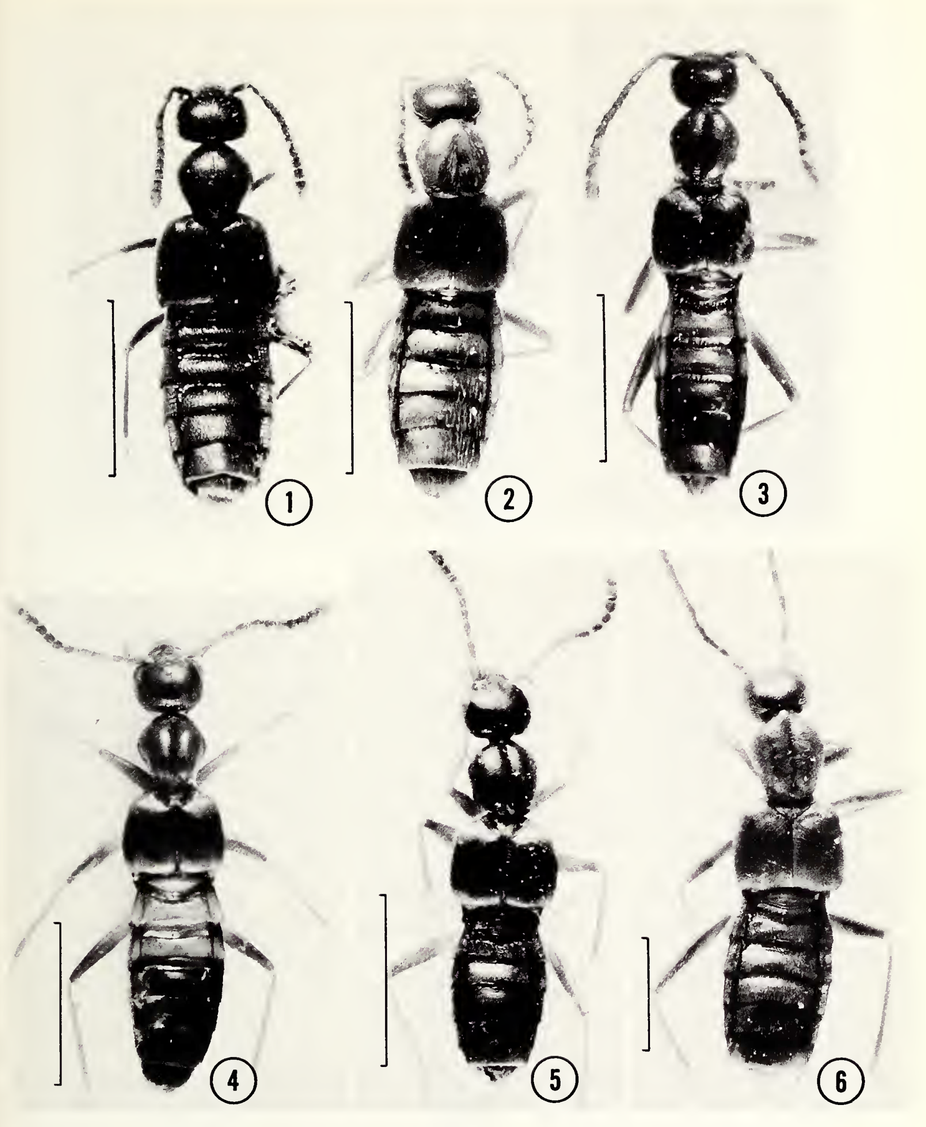
ANATOMICAL CHARACTERS

Anatomical characters of Falagriini are similar to those of other Staphylinidae and are outlined below using terminology of Blackwelder (1936) and Seevers (1978).

Microsculpture. Surface microsculpture of the head, pronotum, elytra and abdominal terga is of taxonomic value at the species level only in *Myrmecocephalus.* The pattern of microlines is constant for sclerites and species, and must be viewed using high magnification and an intense, diffuse light source (see Methods). Two sorts of microsculpture are recognized. Transverse microsculpture, the most common sort, consists of irregular transverse meshes of wavy microlines which is denser in some species (abdominal terga of *M. cingulatus, concinnus, gracilis,* and *gatineauensis*), sparser in others (abdominal terga of *M. caviceps* and *pinalicus*). Reticulate microsculpture consists of a network of fine, fused lines forming an isodiametric (penta- or hexagonic) pattern, as seen in *M. sculpturatus.* In *M. arizonicus* and specimens of all other genera of the tribe in America north of Mexico, there is no apparent surface microsculpture.

Punctation and pubescence. All body surfaces are finely or coarsely punctured and pubescent. The head is very finely punctured and sparsely pubescent. Pronotal punctation varies among taxa, from very fine (*Cordalia, Falagriota, Myrmecocephalus* and *Borboropora*) to very dense, coarse, and often asperate (*Aleodorus*); the pubescence is uniform and moderate to dense. Elytral punctation is either uniform (*Falagria, Myrmecocephalus, Falagriota* and *Leptagria*) or very dense, coarse, and often asperate near the scutellum (*Aleodorus, Borboropora, Falagrioma* and *Lissagria*). Elytral pubescence is uniform and moderate to dense. The terminal abdominal terga are more densely and closely but less asperately punctured than the basal terga.

Head. The head is abruptly constricted behind, forming a distinct neck. Its most important characters are shape and relative size.



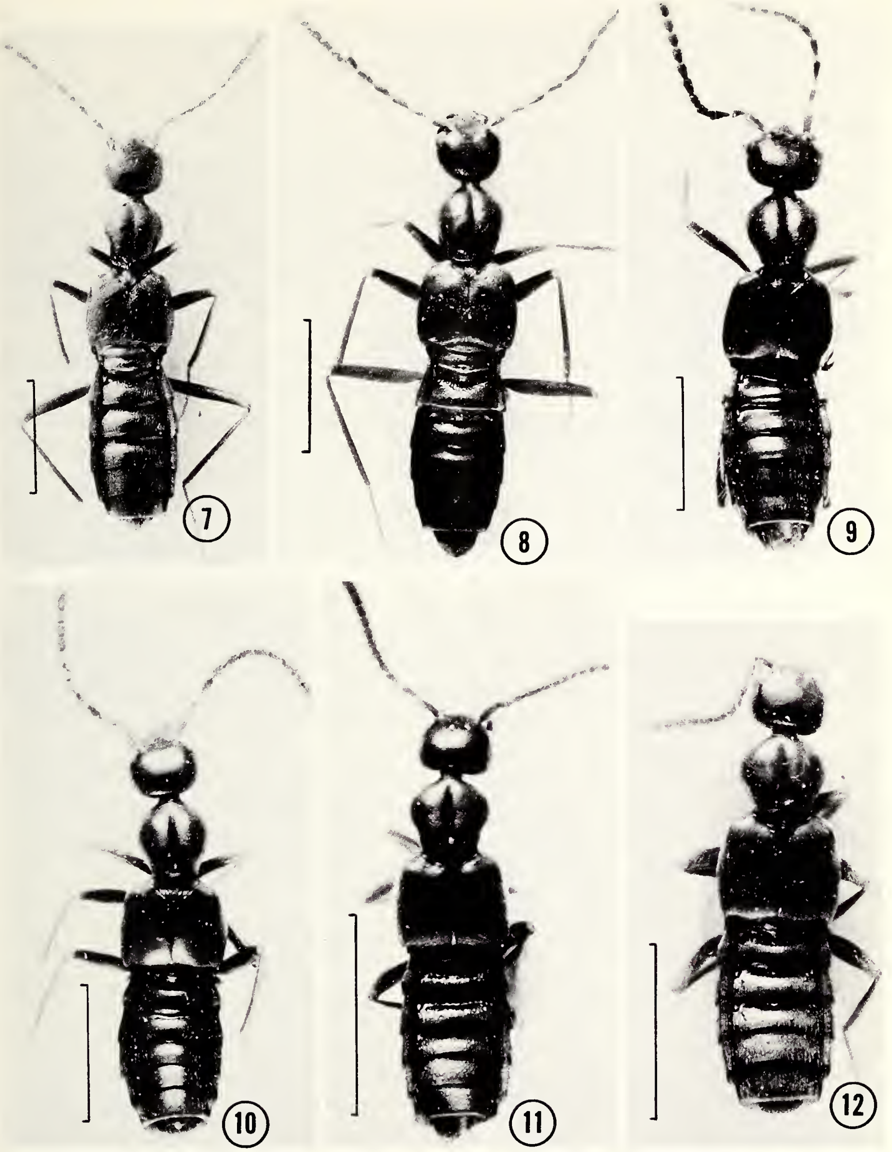
Figs. 1–6. Habitus, dorsal aspect. 1. *Cordalia obscura*. 2. *Falagriota occidua*. 3. *Myrmecocephalus cingulatus*. 4. *M. concinnus*. 5. *M. gracilis*. 6. *M. sculpturatus*. All scale lines = 1.0 mm.

Mouthparts. Slight variation is found in mouthparts of the Falagriini. The labrum is large, transverse and strongly setose, with the anterior margin rounded to subtruncate. Mandibles are robust or elongate, slender and prominent (*Borboropora*). The inner margin of the right mandible is with or without teeth; the inner surface of the left mandible is simple. The maxilla is uniform in structure, with size and shape of the cardo, stipes, galea and lacinia subject to little variation. The galea is as long as or longer than the lacinia and densely pubescent at the membranous apex. The lacinia is feebly curved apically, with apex attenuate and hooked; the apical half or third is armed with a brush of long to short spines on the mesal surface, and sparsely to densely pubescent below the spines. The maxillary palpus is 4-segmented, slender and elongate. Segment 3 is longer, and usually broader than 2, with the apical half incrassate. Segment 4 is long, narrow, and subuliform. The mentum is transverse and narrowed towards the front, with the anterior margin emarginate to subtruncate. The ligula is long, deeply bifid, and shorter than segment 1 of the labial palpus. The labial palpus is 3-segmented, elongate. Segment 1 is long and broad. Segment 2 is very short and narrower than 1. Segment 3 is longer than 2 and truncate at the apex.

Pronotum. Considerable variation is found in the dorsal aspect of the pronotum. In nearly all members of the tribe, the pronotum narrows appreciably at the base, and is deeply sulcate along the median line in specimens of all species except *Falagriota occidua* and *Cordalia obscura.* In specimens of some genera, the hypomera (the inflexed portion of the pronotum) is set off or delimited from the disc by a marginal ridge or carina. The hypomera varies from long and narrow (*Myrmecocephalus*) to short and dilated at the middle (*Falagria, Falagrioma, Leptagria* and *Falagriota*). The marginal ridge is completely absent in *Cordalia, Aleodorus, Lissagria* and *Borboropora* and the hypomera is indistinguishable from the disc of the pronotum. The ventral aspect of the prothorax includes the elongate sternum; the hypomera; and a pair of usually enlarged, heavily sclerotized mesospiracular plates or peritremes. These peritremes, which support the mesothoracic spiracles, are large, quadrate and contiguous in *Aleodorus, Falagria, Cordalia* and *Myrmecocephalus,* or ovoid, slightly separated in *Lissagria.* In *Falagriota,* these sclerites are reduced in size and widely separated, exposing a greater amount of membrane.

Mesosternum and metasternum. Sternal elements of the pterothorax provide important taxonomic characters. The posterior margin of the mesosternum is prolonged at the middle as a broad to narrow median lobe (mesosternal process), partially separating the mesocoxae. When viewed from below, the mesosternum and metasternum are on the same level or plane in all genera, except in *Aleodorus* where the mesosternum is elevated above the metasternum (Fig. 79). The metasternum is represented by a large, broad sclerite whose anterior margin at the median line projects forward between the mesocoxae as a broad lobe. In most genera the intercoxal processes are separated by a short, and sometimes depressed, isthmus. Intercoxal processes vary in length, width, convexity, and degree of separation. Mesocoxal cavities are moderately separated and usually not delimited posteriorly. In *Cordalia,* however, the posterior aspects of the mesocoxal acetabula are defined by a fine bead, raised line (Fig. 76).

Scutellum. The scutellum is simple, flat or convex, densely and coarsely punctured in *Leptagria, Falagriota, Lissagria* and *Borboropora* and some species of *Aleodorus*;



Figs. 7–12. Habitus, dorsal aspect. 7. *Myrmecocephalus arizonicus*. 8. *M. gatineauensis*. 9. *M. caviceps*. 10. *M. pinalicus*. 11. *Falagria dissecta*. 12. *F. sulcata*. All scale lines = 1.0 mm.

flat with a broad to narrow, and sometimes incomplete, impressed channel in some species of *Aleodorus* and in *Falagrioma*; completely or incompletely unicarinate along the median line in *Myrmecocephalus*; and bicarinate in *Falagria*.

Elytra. The elytra offer few diagnostic characters. Punctation and pubescence is generally evenly and uniformly distributed over the surface of the disc, but in some taxa the punctation and pubescence is much more dense near the scutellum (see Punctation and Pubescence). Elytra are generally longer than the prothorax, except in *Falagriota occidua* where some individuals have reduced and shortened elytra.

Abdomen. The abdomen is 10-segmented and telescopic as in other Staphylinidae. It is constricted at the base, and not quite as broad at the base as the elytra. Abdominal terga III–V are transversely impressed at the base, with the impressions variously punctured and sculptured or smooth and impunctate.

Terminalia. The tergites and sternites of segments VIII and IX and the tergum of segment X are here defined as the terminalia. Segment VIII consists of a tergum and sternum only. Segments IX and X are modified in relation to the genitalia and show little modification from the typical structure found in other Staphylinidae (see Blackwelder, 1936). There is a virtual absence of secondary sexual characters in most Falagriini. Only the male has a ninth abdominal sternite, and this provides the only external means of identifying the sexes. However, in most dried specimens the apex of the abdomen is telescoped, making it impossible to determine the sex without relaxing them. In some members of the tribe the apical margin of tergum VIII is simple and unmodified (*Falagriota* and *Myrmecocephalus*) while in others the apical margin is either emarginate and densely fimbriate (*Cordalia*), or minutely denticulate (*Falagria, Leptagria, Falagrioma, Aleodorus, Lissagria* and *Borboropora*). Sternum VIII is unmodified except in the female of *Myrmecocephalus concinnus* where the apex is deeply notched at the middle.

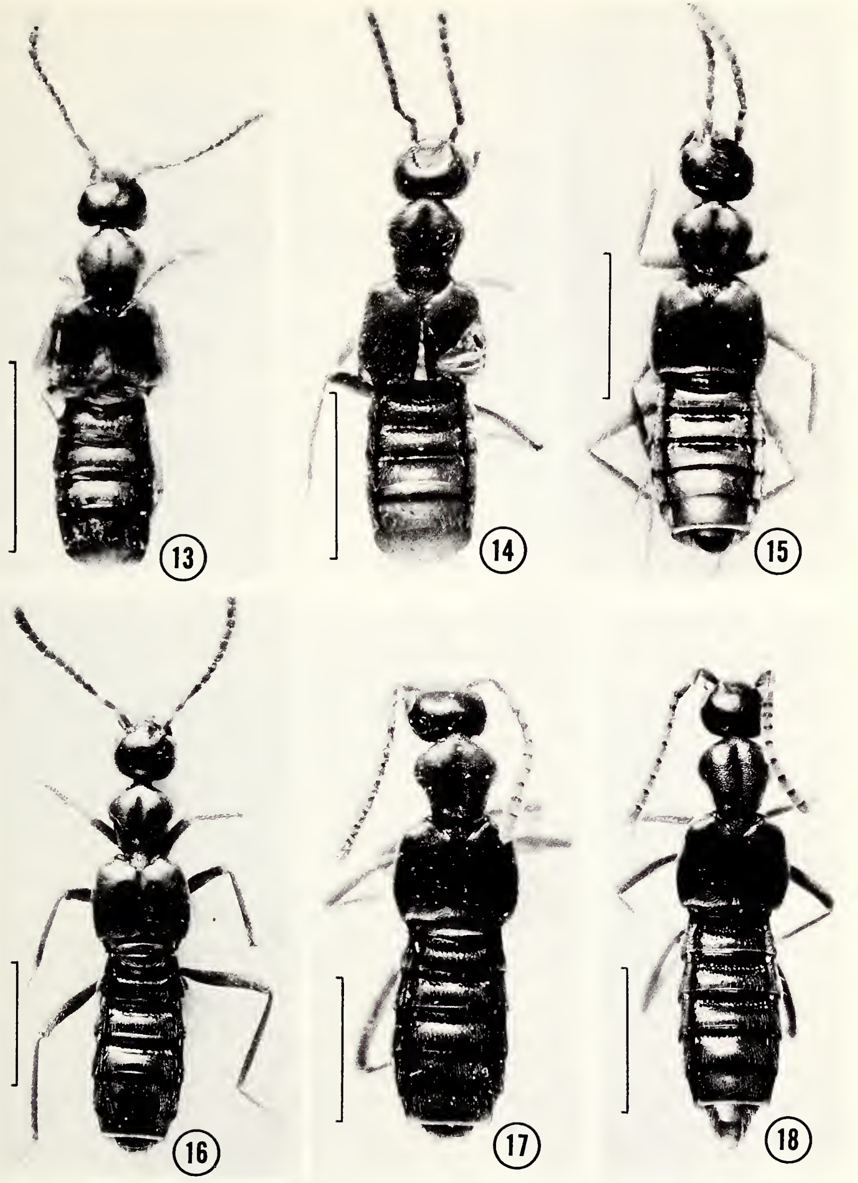
Male genitalia. Characters of the male genitalia are important in distinguishing genera and species. The genitalia consist of a tubular median lobe, which is bulbous basally, and two parameres. The membranes of the internal sac are adorned with variously shaped accessory structures (plates and spinules). A flagellum is present or absent. As in other Aleocharinae, the parameres are large, expansive structures. Each paramere, consisting of the condylite and paramerite, articulates with the median lobe by condyles distad to the median foramen. The apical lobe of the paramerite varies in shape, length and chaetotaxy. The parameres of members of the Falagriini are distinctive: the velum of the condylite is clearly separated from that of the paramerite, a condition shared only with the Sceptobiini (Seevers, 1978:148).

Female genitalia. The female genitalia are simple and unsclerotized. Shape of the heavily sclerotized spermatheca (and sometimes spermathecal duct) is an important character at the species level, though subject to some minor intraspecific variation.

SYSTEMATICS

Tribe Falagriini

Falagriae Erichson, 1840, p. 34; Casey, 1906, p. 183 (ex parte); Fenyes, 1918, p. 18; Leng, 1920, p. 124 (ex parte); Notman, 1920, p. 730 (ex parte); Bernhauer and Scheerpeltz, 1926, p. 571 (ex parte); Scheerpeltz, 1929, p. 9 (ex parte); Bradley,



Figs. 13–18. Habitus, dorsal aspect. 13. *Leptagria perexilis.* 14. *Falagrioma socorroensis.* 15. *Aleodorus partitus.* 16. *A. intricatus.* 17. *A. scutellaris.* 18. *A. bilobatus.* All scale lines = 1.0 mm.

1930, p. 85; Scheerpeltz, 1934, p. 1568 (ex parte); Blackwelder, 1944, p. 158 (ex parte); Hansen, 1954, p. 95 (ex parte); Palm, 1968, p. 75 (ex parte); Scheerpeltz, 1974, p. 51, 221 (ex parte).

Falagriates Mulsant and Rey, 1875, p. 428; Ganglbauer, 1895, p. 107.

Falagriini Horion, 1967, p. 198 (ex parte); Lohse, 1974, pp. 15, 64 (ex parte); Seevers, 1978, p. 143 (excl. *Myrmecopora*).

Falagrina Arnett, 1968, p. 288 (ex parte).

Diagnosis. In addition to the characters shared by other Staphylinidae and, in particular other Aleocharinae, members of the tribe Falagriini are characterized by the following features.

Staphylinidae (Aleocharinae) of very small size, generally much less than 4.0 mm (most 2.0–3.5 mm in length), narrow and elongate form, most specimens convex or slightly depressed.

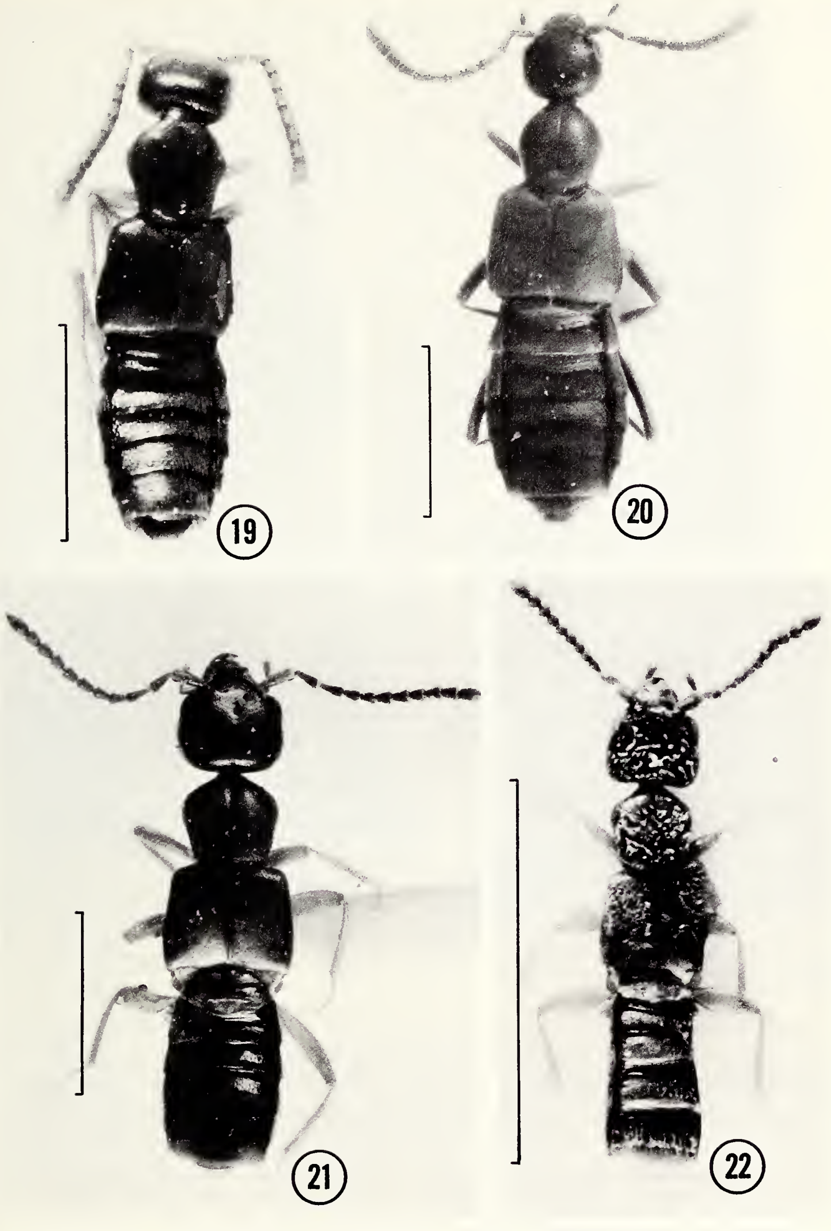
Head moderate to large, variously shaped from rounded to quadrate, with a distinctly constricted neck, less than ⅓ as wide as the head in most specimens. Antenna 11-segmented. Lacinia of maxilla spinose at apex and ciliate along inner margin. Galea finely and densely ciliate on membranous apex. Maxillary palpus 4-segmented. Labial palpus 3-segmented. Ligula bifid.

Prothorax narrowed at base; base not more than ¾ of the maximum width; disc with distinct sulcus along median line in most specimens (sulcus faint in *Falagriota* and *Cordalia*), ending in a round or transverse fovea. Prosternum elongate before and behind procoxae; mesospiracular plates or peritremes behind each procoxa usually extremely enlarged and heavily sclerotized (peritremes smaller in *Falagriota*). Inflexed hypomera of pronotum either delimited by a marginal ridge or not. Procoxal cavities functionally "closed" by the elongated prosternum, hypomera, and enlarged mesospiracular peritremes. Mesocoxal cavities moderately separated. In most genera the mesosternum and metasternum are on the same level; however, in *Aleodorus* the posterior margin of the mesosternum is on a level or plane ventral to the metasternum, and the mesosternal process is very short.

Scutellum usually large, triangular and variously sculptured (variation discussed under each generic section).

Elytra usually at least ¼ longer than prothorax, convex, sides subparallel, broadly arcuate posteriorly, posterior margins broadly sinuate at outer angles. Elytra shortened in some individuals of *Falagriota occidua.* Disc uniformly punctured and pubescent (*Falagria, Falagriota, Cordalia, Leptagria,* and *Myrmecocephalus*), or with area of dense and coarse punctation and pubescence near scutellum (*Aleodorus, Borboropora, Lissagria* and *Falagrioma*). Dorsal surface between punctures smooth and shining (most species of the tribe) or with fine surface microsculpture (most species of *Myrmecocephalus*).

Abdomen broad and slightly constricted at base, not quite as broad as elytra at apex. Terga III–V usually broadly, transversely and deeply impressed at base; impressions smooth, or coarsely sculptured and punctate. Apical margin of tergum VIII with an arcuate comb of minute denticles (*Leptagria, Falagria, Falagrioma, Lissagria, Borboropora* and *Aleodorus*), densely fimbriate (*Cordalia obscura*), or simple and unmodified (*Falagriota* and *Myrmecocephalus*).



Figs. 19–22. Habitus, dorsal aspect. 19. *Lissagria laticeps*. 20. *L. laeviuscula*. 21. *Borboropora quadriceps*. 22. *B. sulcifrons*. All scale lines = 1.0 mm.

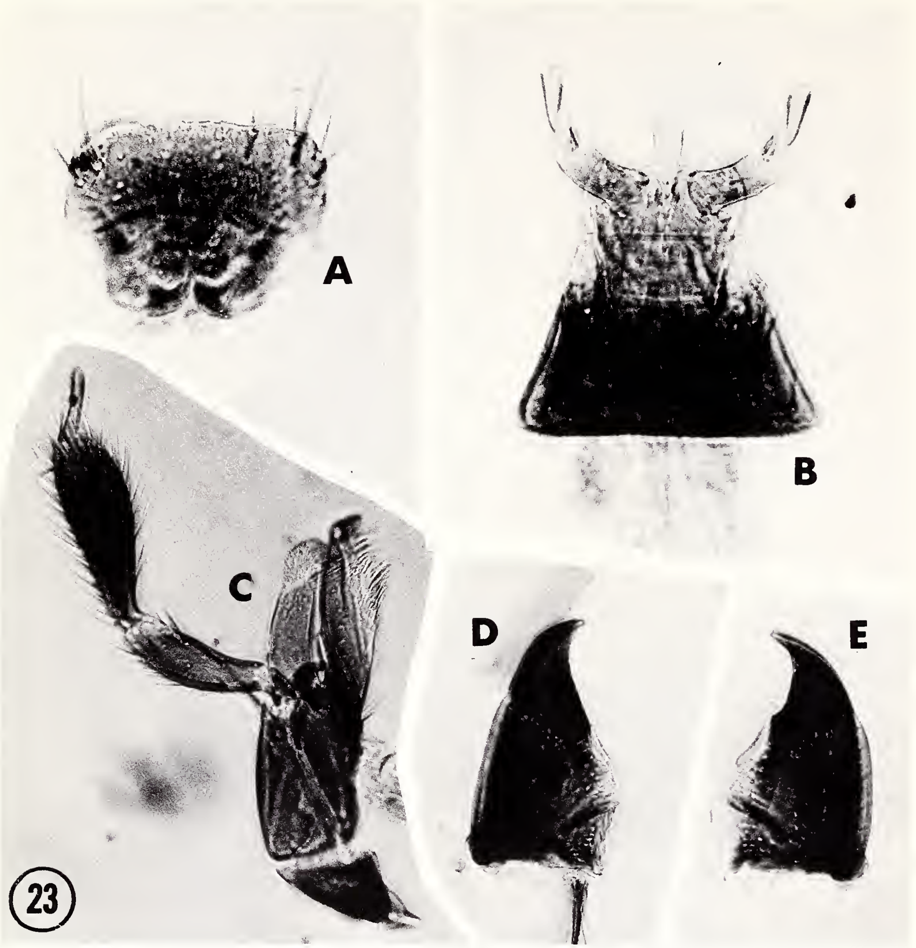


Fig. 23. Mouthparts of *Cordalia obscura.* A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

Legs generally long and slender; hind tarsus elongate, ⅔ to equal in length to tibia; segment 1 subequal in length to 2–3 or 2–4 combined. Tarsal formula 4,5,5.

Median lobe of aedeagus variously shaped in profile, but with a bulbous base and tubular apex; internal sac with various accessory structures (plates and spinules), with or without a flagellum; paramere large, distinctive and unique: condylite velum clearly separated from paramerite velum.

Spermatheca heavily sclerotized and variously shaped.

Remarks. Myrmecopora Saulcy, containing only a single species (*vaga*) in America north of Mexico, herein is removed from the Falagriini. The characters by which it is excluded are the broad neck of the head capsule; the pronotum not narrowed

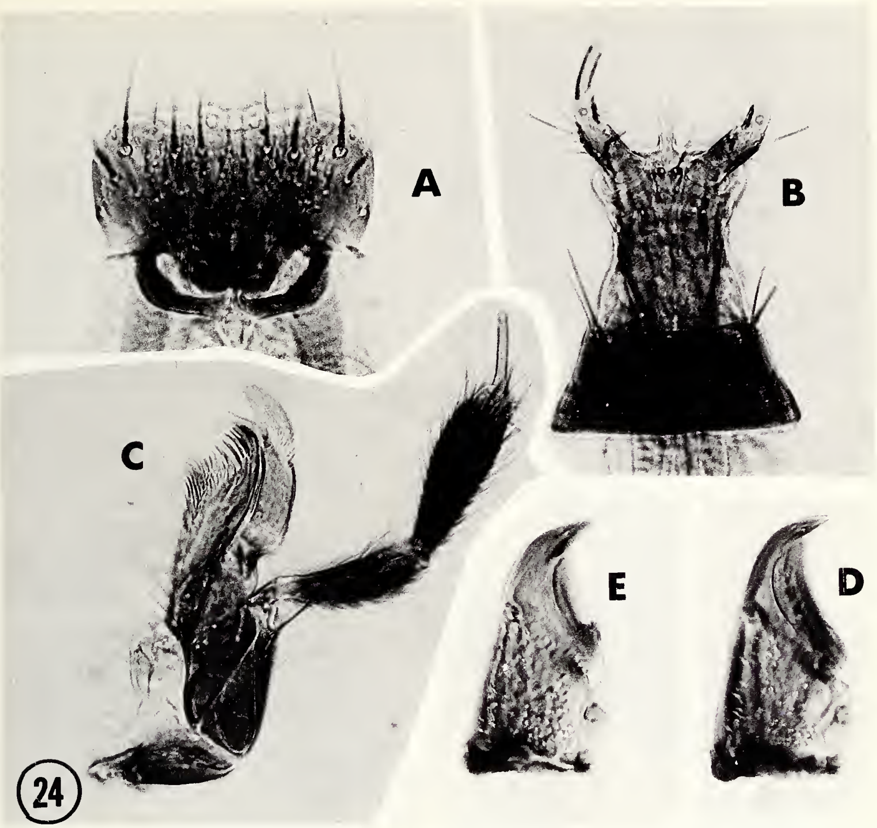


Fig. 24. Mouthparts of *Falagriota occidua*. A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

behind the middle; the lack of a defined median sulcus of the pronotum; the small, corset-like mesospiracular peritremes; and the velum of the paramerite confluent with that of the condylite.

North American aleocharines closely resembling, and likely to be confused with, the Falagriini include members of the tribes Oxypodini (subtribes Tachyusae and Blepharhymeni) and Autaliini. The Tachyusae previously have been closely aligned to the Falagriini because of the similar habitus of some members and the shared 4,5,5 tarsal formula (Bernhauer and Scheerpeltz, 1926 and others), but they lack the specialized features of the Falagriini. Members of the Tachyusae have the condylite velum (of the male paramere) confluent with the paramerite velum; pronotum not narrower at base than apex; pronotum without a distinct median sulcus; and prosternal membrane without enlarged, heavily sclerotized mesospiracular peritremes. The Blepharhymeni (including the sole North American genus *Blepharhymenus*), although closely resembling many *Tachyusa* in overall appearance (especially ab-

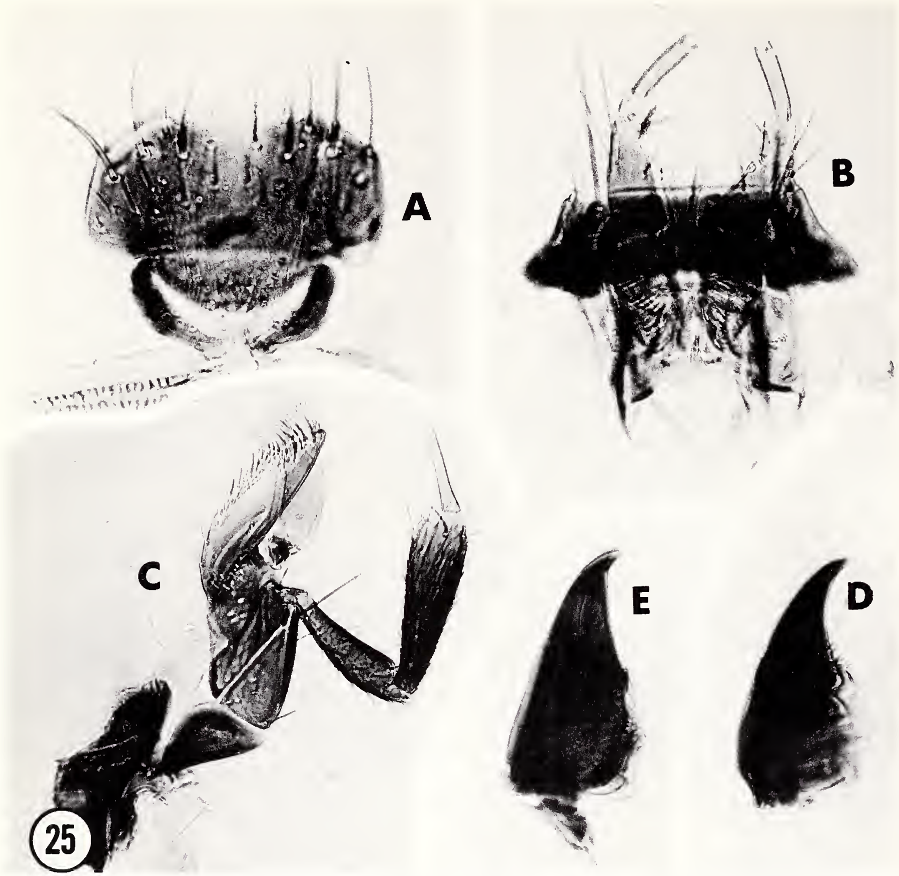


Fig. 25. Mouthparts of *Myrmecocephalus cingulatus.* A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

dominal characteristics), have a 5,5,5 tarsal formula and a moderately broad neck of the head capsule. Like the Falagriini, the Autaliini (with the single genus *Autalia* in North America) have a head capsule with a very slender neck and a distinctive habitus. However, species of *Autalia* are differentiated from the Falagriini by a 4,4,5 tarsal formula, the pronotum with four subbasal foveae, and each elytron with two conspicuous basal foveae.

To distinguish the Falagriini from other myrmedoniine-related tribes, a key by Kistner (1972) should be consulted, and also the work of Seevers (1978).

CHECKLIST OF THE FALAGRIINI OF AMERICA NORTH OF MEXICO

The species listed below (and synonymies) have been arranged alphabetically for each genus and do not necessarily reflect relationship. For each taxon, reference is given for the original description only.

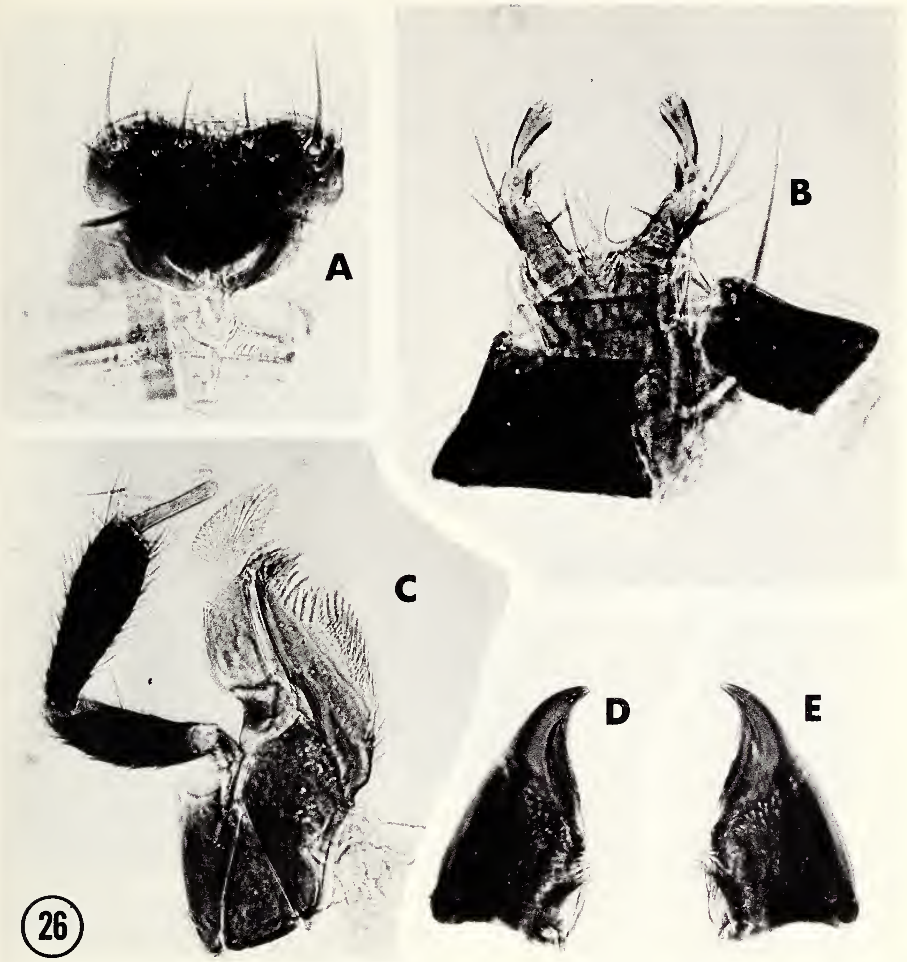


Fig. 26. Mouthparts of *Falagria dissecta*. A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

FALAGRIINI Erichson, 1840:34
Cordalia Jacobs, 1925:82
    Cardiola Mulsant and Rey, 1874:38
    Cardiolita Strand, 1933:123
    Strandiodes Bernhauer, 1930:191
    Falagria auctorum (in part)
  obscura (Gravenhorst, 1802:74)
    crassiuscula (Hochhuth, 1871:87)
    flavipes (Stephens, 1832:105)
    floralis (Stephens, 1832:105)
    immunis (Stephens, 1832:129)
    nitens (Stephens, 1832:105)
Falagriota Casey, 1906:255
  occidua (Casey, 1885:285)
    asperula Casey, 1906:257
    collaris Casey, 1906:258
    evanescens Casey, 1906:258
    lucida Casey, 1906:257
    parvipennis Casey, 1906:259
    picina Casey, 1906:257
Myrmecocephalus MacLeay, 1873:134
    Lorinota Casey, 1906:238

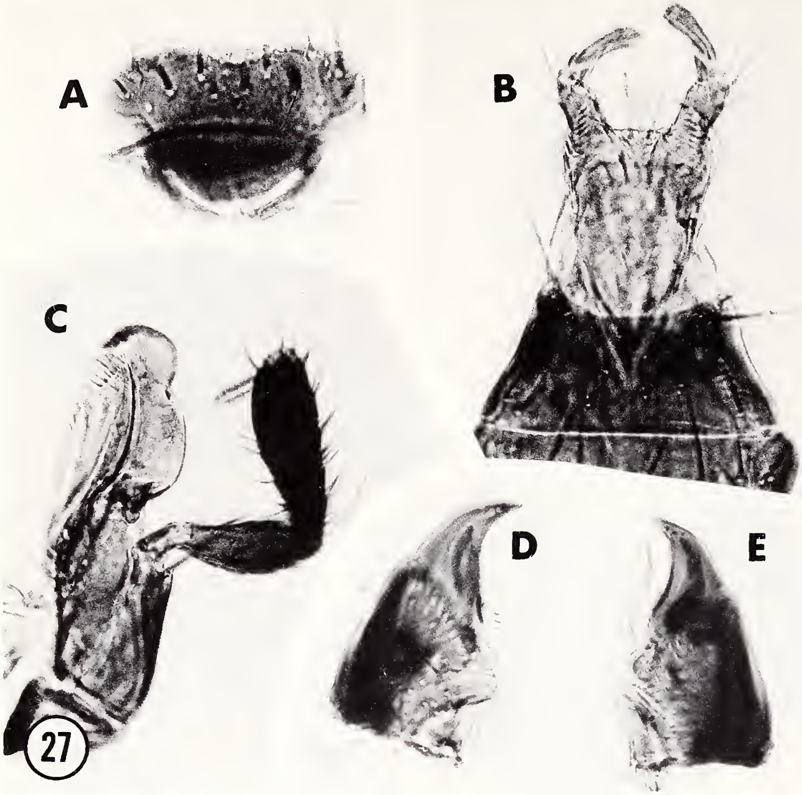


Fig. 27. Mouthparts of *Leptagria perexilis.* A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

  Stenagria Sharp, 1883:237
  Stiliciodes Broun, 1880:95
arizonicus (Casey, 1906:241)
  acomana (Casey, 1906:242)
  fontinalis (Casey, 242)
caviceps (Casey, 1906:240)
cingulatus (LeConte, 1866:370)
  sinuosa (Casey, 1911:178)
  tenuicornis (Casey, 1906:243)
concinnus (Erichson, 1840:51)
  bilimbata (Casey, 1906:245), **New Synonym**
  currax (Sharp, 1880:37)
  fovea (Sharp, 1874:3)
  longipes (Wollaston, 1871:284)
  parae (Sharp, 1876:41)
gatineauensis Hoebeke, **New Species**
gracilis (Casey, 1906:244), **Revised Status**
  parva (Casey, 1906:244), **New Synonym**
pinalicus (Casey, 1906:241), **Revised Status**
sculpturatus Hoebeke, **New Species**
Falagria Leach, 1819:177
  Coenobiotes Gistel, 1856:387
dissecta Erichson, 1840:49
  angulata Casey, 1906:249

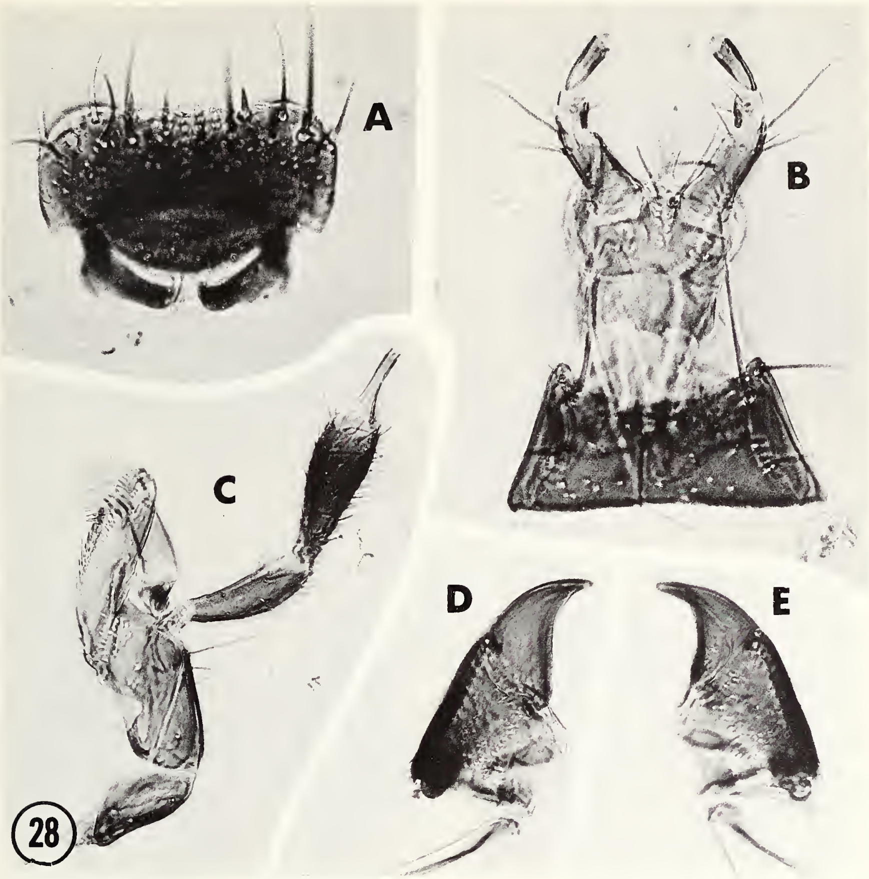


Fig. 28. Mouthparts of *Falagrioma thoracica.* A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

erythroptera Melsheimer, 1846:30
globosa Melsheimer, 1846:30
iowana Casey, 1906:247
ithacana Casey, 1906:247
sterilis Casey, 1911:178
subsimilis Casey, 1906:248
texana Casey, 1906:248
sulcata (Paykull, 1789:32)
caesa Erichson, 1839:295
sicula Jekel, 1873:33
Leptagria Casey, 1906:227, **Revised Status**
perexilis Casey, 1906:250
hudsonica Casey, 1906:251
Falagrioma Casey, 1906:230, **Revised Status**
Anaulacaspis auctorum (in part)
Falagria auctorum (in part)
socorroensis Hoebeke, **New Species**
Aleodorus Say, 1830:60
Chitalia Sharp, 1883:235
bilobatus (Say, 1830:60)
canadensis (Casey, 1906:236)
nigrescens (Casey, 1906:236)

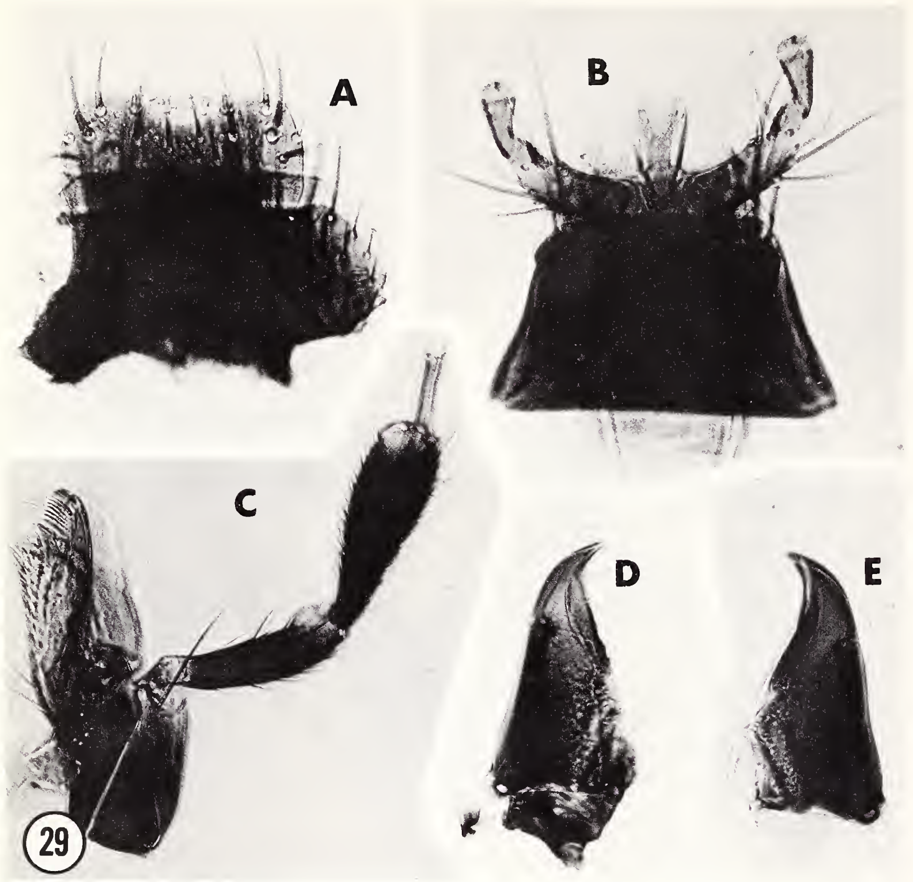


Fig. 29. Mouthparts of *Aleodorus bilobatus.* A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

turbata (Casey, 1911:176)
intricatus (Casey, 1906:234)
partitus (LeConte, 1866:371)
floridana (Casey, 1906:237)
novella (Casey, 1911:176)
scutellaris (LeConte, 1866:370), **Revised Status, New Combination**
granulosa (Casey, 1906:235), **New Synonym**
illustris (Casey, 1906:235), **New Synonym**
Lissagria Casey, 1906:252
Omoschema Notman, 1920:731, **New Synonym**
laeviuscula (LeConte, 1866:371)
fissilis Casey, 1906:254
impressifrons Casey, 1906:254
longicollis Casey, 1906:255
minuscula Casey, 1906:254
robusta Casey, 1906:254
laticeps (Notman, 1920:732), **New Combination**
Borboropora Kraatz, 1862:405
Aneurota Casey, 1893:347

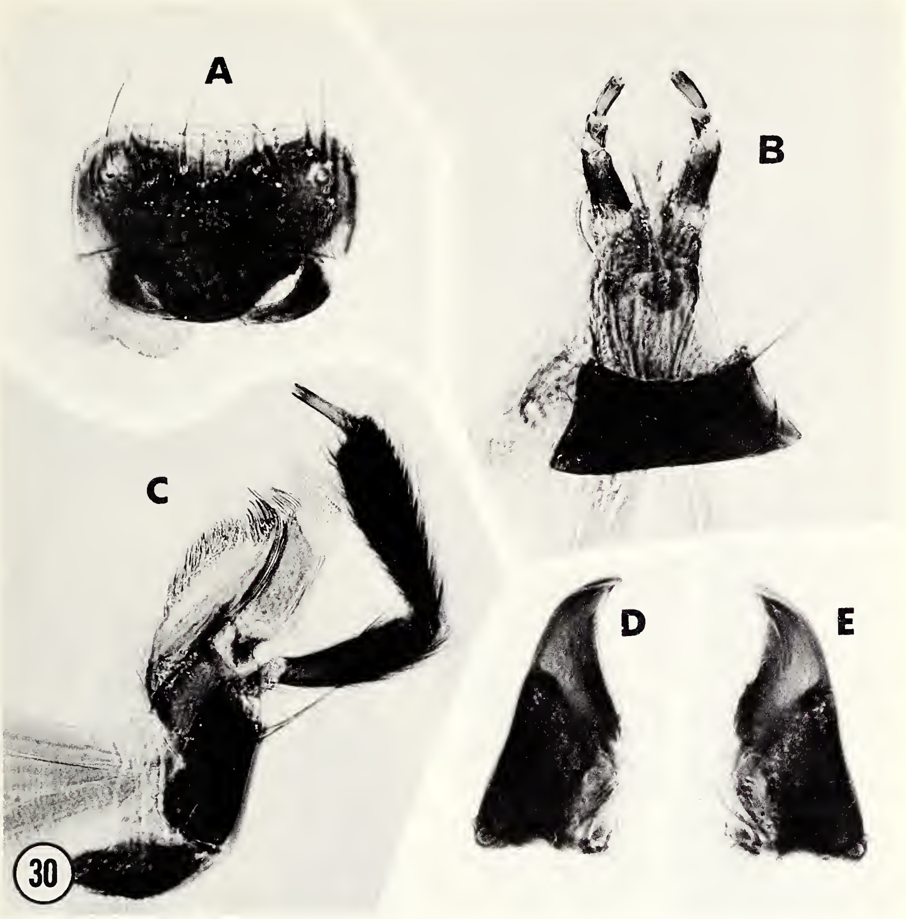


Fig. 30. Mouthparts of *Lissagria laeviuscula*. A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

Orthagria Casey, 1906:260
Pseudoscopaeus Weise, 1877:8
quadriceps (LeConte, 1866:371)
grandis Bernhauer, 1905:21
sulcifrons (Casey, 1893:348)

KEY TO GENERA OF FALAGRIINI OF AMERICA NORTH OF MEXICO

1. Mesospiracular peritremes large, quadrangular or ovoid (Figs. 79, 80); pronotum moderately to deeply sulcate (Figs. 34–38) 2
– Mesospiracular peritremes smaller (Fig. 77); pronotum very faintly sulcate (Fig. 33) . . . . 2. *Falagriota* Casey

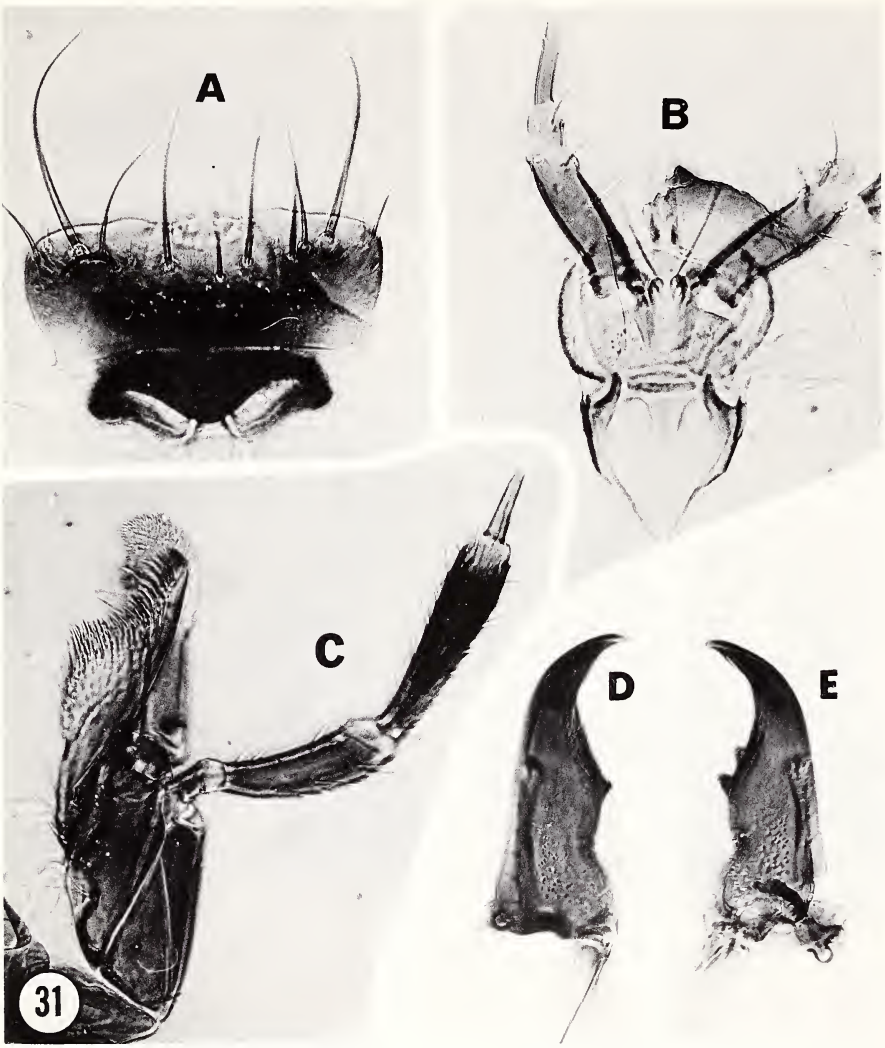


Fig. 31. Mouthparts of *Borboropora quadriceps.* A. Labrum. B. Labium. C. Maxilla. D. Left mandible. E. Right mandible.

2. Elytral punctation dense near scutellum (Figs. 48–50); apical margin of tergum VIII with arcuate comb of minute denticles (Figs. 72–75) 3
– Elytral punctation not dense near scutellum, uniform throughout (Fig. 47); apical margin of tergum VIII with or without comb of denticles, or densely fimbriate (Fig. 70) 6
3. Hypomera delimited from disc of pronotum by marginal ridge (Figs. 40, 41) .... 6. *Falagrioma* Casey
– Hypomera not delimited from disc of pronotum (Figs. 42, 43) 4
4. Mesosternum on a level ventral to the metasternum (Fig. 79); mesosternal process short, acute, not extended between mesocoxal cavities .... 7. *Aleodorus* Say

- Mesosternum on the same level as the metasternum (Figs. 78, 80); mesosternal process longer, partially separating mesocoxal cavities 5

5. Head large, subquadrate, with a median, longitudinal impression on anterior half of vertex in most specimens (Figs. 21, 22) .... 9. *Borboropora* Kraatz

- Head not large, rounded or transverse; vertex without median, longitudinal impression .... 8. *Lissagria* Casey

6. Mesocoxal acetabula margined posteriorly by fine bead, raised line (Fig. 76); apical margin of tergum VIII densely fimbriate (Fig. 70); each elytron at base with small, but distinct depression near humeral angle .... 1. *Cordalia* Jacobs

- Mesocoxal acetabula not margined posteriorly; apical margin of tergum VIII with or without comb of minute denticles; each elytron at base without depression near humeral angle 7

7. Apical margin of tergum VIII without denticles, simple (Fig. 71); scutellum with median longitudinal carina (complete or incomplete) (Fig. 34) .... 3. *Myrmecocephalus* MacLeay

- Apical margin of tergum VIII with comb of very minute denticles (Fig. 72); scutellum not as above (Figs. 44–46) 8

8. Scutellum bicarinate (Figs. 35, 44) .... 4. *Falagria* Leach

- Scutellum coarsely granulose (Fig. 36), with narrow, smooth, median impression, without carinae .... 5. *Leptagria* Casey

1. *Cordalia* Jacobs

Cardiola Mulsant and Rey, 1874, p. 38 [junior homonym of *Cardiola* Broderip, 1834]; Casey, 1906, pp. 224, 231; Reitter, 1909, p. 75; Fenyes, 1912, pp. 20, 21, 25; Notman, 1920, p. 731; Fenyes, 1920, p. 147; Everts, 1922, p. 104; Bernhauer and Scheerpeltz, 1926, p. 572; Portevin, 1929, pp. 253, 294; Blackwelder, 1952, p. 93.

As subgenus of *Falagria*: Ganglbauer, 1895, p. 255; Everts, 1898, p. 231; Johansen, 1914, p. 241; Porta, 1926, p. 150.

Variant spelling: *Cardicola* Duvivier, 1883, p. 93.

Type-species: Aleochara obscura Gravenhorst, fixed by monotypy (Mulsant and Rey, 1874:38).

Cordalia Jacobs, 1924 (1925), p. 82 (=new name for *Cardiola* Mulsant and Rey, *nec* Broderip, 1834); Scheerpeltz, 1929, p. 9; 1930, p. 73; 1934, p. 1568; Cameron, 1939, pp. 233, 235; Tottenham, 1949, p. 387; Horion, 1951, p. 168; Blackwelder, 1952, p. 107; Hansen, 1954, p. 100; Horion, 1967, p. 199; Arnett, 1968, p. 288; Palm, 1968, p. 78; Scheerpeltz, 1974, pp. 51, 221; Moore and Legner, 1975, p. 390; Seevers, 1978, p. 146.

Type-species: Aleochara obscura Gravenhorst, through objective synonymy with *Cardiola.*

Strandiodes Bernhauer, 1930, p. 191 (=unnecessary new name for *Cardiola* Mulsant and Rey); Blackwelder, 1952, p. 364.

Type-species: Aleochara obscura Gravenhorst, through objective synonymy with *Cardiola.*

Cardiolita Strand, 1933, p. 123 (=unnecessary new name for *Cardiola* Mulsant and Rey); Blackwelder, 1952, p. 94.

Type-species: Aleochara obscura Gravenhorst, through objective synonymy with *Cardiola.*

Falagria auctorum (ex parte): Mannerheim, 1831, p. 87; Boisduval and Lacordaire, 1836, p. 556; Erichson, 1839, p. 295; 1840, p. 54; Heer, 1839, p. 351; Redtenbacher, 1849, p. 651; Fairmaire and Laboulbène, 1856, p. 373; Kraatz, 1868, p. 35; Redtenbacher, 1858, p. 119; Thomson, 1860, p. 298; Redtenbacher, 1874, p. 130; Fowler, 1888, p. 148; Ganglbauer, 1895, p. 255; Everts, 1898, p. 231; 1903, p. 103; Johansen, 1914; p. 241; Porta, 1926, p. 150; Rapp, 1933, p. 403.

Biology: Fauconnet, 1887, p. 91; Xambeu, 1902, pp. 1–53; 1903, pp. 178–180; 1910, p. 21; Rapp, 1933, p. 404.

Diagnosis. No other genus of Falagriini occurring in America north of Mexico can be confused with *Cordalia.* Distinguishing characters of adults, besides the characteristic habitus (Fig. 1), are the globose, cordiform prothorax; the presence of a depression at the base of the elytra near the humerus; and the mesocoxal acetabula margined posteriorly by a fine ridge (Fig. 76).

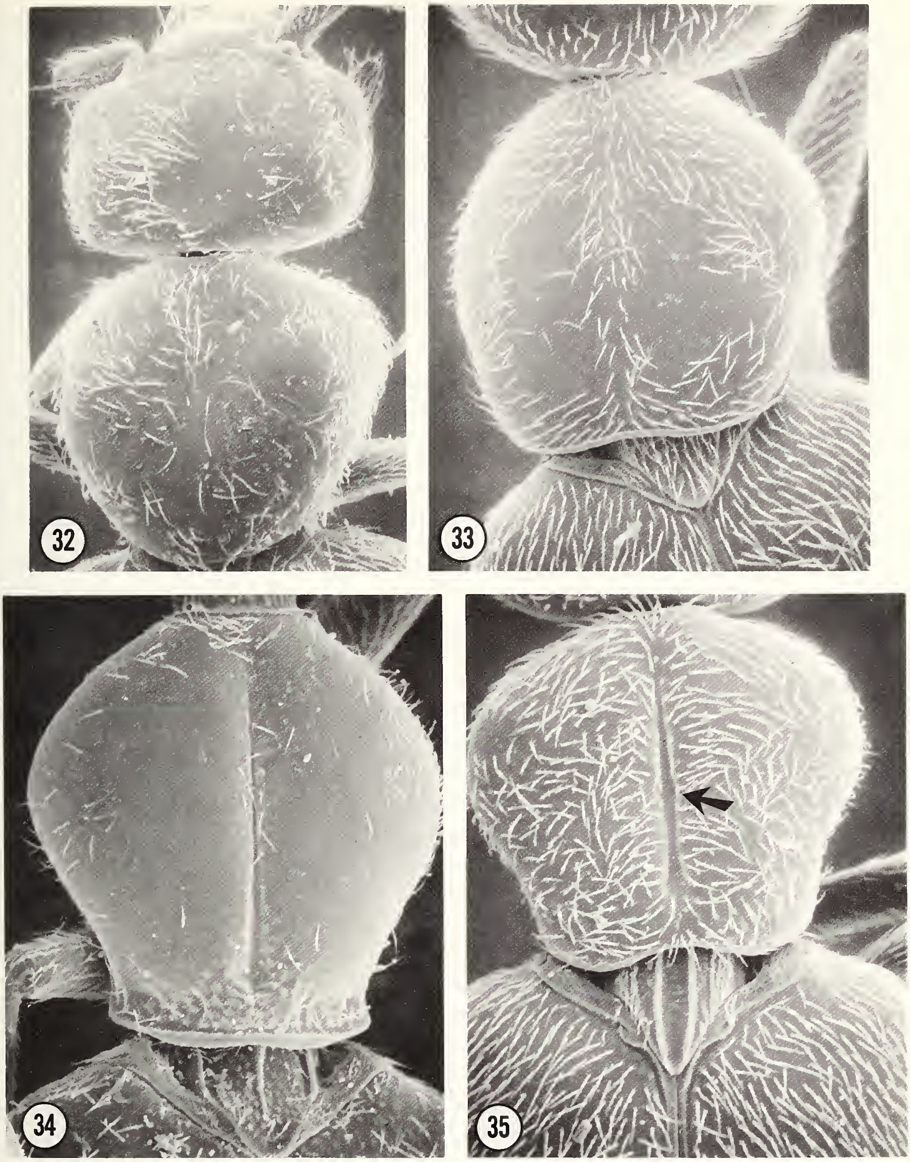
Description. Head about as broad as prothorax, arcuate-truncate at base, basal angles broadly rounded, vertex impressed at middle in male. Neck nearly ⅓ as wide as head including eyes. Eyes small. Labrum (Fig. 23A) transverse, slightly rounded at apex. Mandibles (Fig. 23D, E) moderate in size, slightly curved towards apex; right mandible with small obtuse tooth at middle of inner margin, finely crenulate between tooth and apex; left mandible simple, untoothed. Maxilla (Fig. 23C) with galea shorter than lacinia, pubescent on membranous apex; lacinia slightly curved towards tip, with a few spines between apex and middle of inner margin, pubescent below spines. Maxillary palpus (Fig. 23C) with segment 3 much longer and broader than 2; segment 4 long, cylindrical, truncate at apex, subuliform. Ligula (Fig. 23B) bifid to middle, lobes rounded at apex. Labial palpus (Fig. 23B) with segment 1 long and broad; segment 2 much shorter and narrower than 1; segment 3 longer than 2, feebly conical, truncate at apex. Antenna moderately long, broadened towards apex; segments 1–3 nearly subequal in length; segment 4 very slightly transverse; segments 5–10 gradually more transverse; segment 11 shorter than 9 and 10 combined. Prothorax (Fig. 32) globose, cordiform, strongly narrowed posteriorly, much narrower than elytra at greatest width, finely (or obsoletely) sulcate along median line, sulcus without antebasal impression. Mesospiracular peritremes within prosternal membrane large, quadrate, contiguous along median line. Mesosternal process very short, not quite extending to anterior ¼ of mesocoxae, broad and truncate apically. Metasternal process longer than mesosternal process, flat, transversely truncate at apex, separated from mesosternal process by short, flat isthmus. Mesocoxae broadly separated; acetabula margined behind by fine ridge. Hypomera not delimited from disc by marginal ridge. Scutellum flat, moderately punctured and pubescent. Elytra moderate in size, longer than prothorax along sutural line, each with a distinct depression at base near humerus. Abdomen elongate, broad, at base scarcely narrower than elytral apex. Terga III–V transversely impressed at base.

Members of the genus *Cordalia* are distributed throughout much of the world, but with greatest species diversity in the Ethiopian region. A single species, *obscura* (Grav.), occurs in America north of Mexico.

Cordalia obscura (Gravenhorst)

Figs. 1, 23, 32, 51, 70, 76, 81, 102; Map 1

Aleochara obscura Gravenhorst, 1802, p. 74 [type locality, Brunsuigae]; 1806, p. 151; Gyllenhal, 1810, p. 379; Sahlberg, 1834, p. 346.



Figs. 32–35. Prothoraces of North American Falagriini, dorsal aspect. 32. *Cordalia obscura.* 33. *Falagriota occidua.* 34. *Myrmecocephalus cingulatus.* 35. *Falagria dissecta* (arrow indicates small pocket-like depression near middle of sulcus).

Cardiola obscura; Mulsant and Rey, 1875, p. 455; Reitter, 1909, p. 75; Portevin, 1929, p. 294.

Falagria obscura; Mannerheim, 1831, p. 87; Boisduval and Lacordaire, 1836, p. 556; Erichson, 1839, p. 295; 1840, p. 54; Heer, 1839, p. 351; Redtenbacher, 1849, p. 651; Fairmaire and Laboulbène, 1856, p. 373; Kraatz, 1856, p. 35; Redtenbacher, 1858, p. 119; Thomson, 1860, p. 298; Redtenbacher, 1874, p. 130; Fowler, 1888, p. 148; Ganglbauer, 1895, p. 255; Everts, 1898, p. 231; 1903, p. 103; Johansen, 1914, p. 241; Porta, 1926, p. 150; Rapp, 1933, p. 403.

Cordalia obscura; Jacobs, 1925, p. 82; Scheerpeltz, 1930, p. 73; Scheerpeltz, 1934, p. 1568; Cameron, 1939, p. 236; Tottenham, 1949, p. 387; Horion, 1951, p. 168; Hansen, 1954, p. 100; Horion, 1967, p. 199; Arnett, 1968, p. 288; Palm, 1968, p. 78; Moore and Legner, 1975, p. 390.

Falagria flavipes Stephens, 1832, p. 105 [type locality, Great Britain, Bristol].

Falagria floralis Stephens, 1832, p. 105 [type locality, Great Britain, Norfolk].

Aleochara immunis Stephens, 1832, p. 129 [type locality, Great Britain].

Falagria nitens Stephens, 1832, p. 105 [type locality, Great Britain, London].

Falagria crassiuscula Hochhuth, 1871, p. 87 [type locality, Russia].

Diagnosis. Characters of the genus.

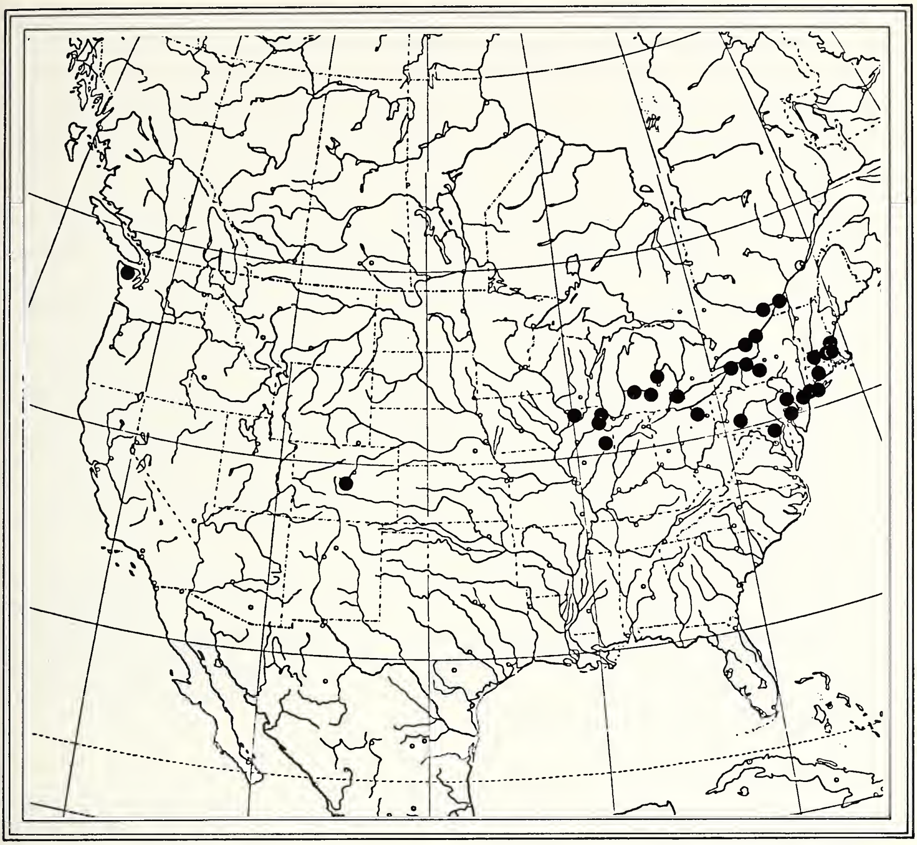
Description. Length 2.0–2.8 mm (N = 64, $\bar{x}$ = 2.44 mm). Body stout, convex. Color dark rufo-testaceous; head, prothorax and abdomen behind segment II usually darker than elytra; mouthparts, antennae and legs pale. Habitus as in Figure 1.

Head (Fig. 32) small, arcuate-truncate at base, vertex impressed in front of occiput (in male only), slightly longer than wide, sides parallel. Surface minutely, sparsely punctured; pubescence moderate to dense; surface between punctures smooth and polished. Eyes slightly shorter than temples. Antenna moderately long, extending to middle of elytra. Prothorax (Fig. 32) cordiform, very convex dorsally, slightly wider than head, sides arcuate, strongly converging to base. Disc slightly sulcate along median line. Surface minutely, sparsely punctured and pubescent; surface between punctures smooth and shining. Elytra with surface finely, densely punctured and pubescent; surface between punctures smooth and shining. Abdomen broad at base, slightly narrower than elytra. Terga III–V broadly and transversely impressed at base; impressions coarsely punctured (Fig. 51). Tergal surfaces densely punctured; surface between punctures smooth and polished.

Male. Eighth tergite with apical margin broadly emarginate at middle, densely fimbriate (Fig. 70). Apical margin of sternum VIII broadly, evenly rounded. Median lobe of aedeagus as in Figure 81A. Paramere as in Figure 81B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 102.

Type material. Aleochara obscura Gravenhorst. Lectotype, here designated, with the following labels: "Europa, Hist. Coll. Nr. 5296"/TYPUS/Zool. Mus. Berlin; my lectotype designation label is attached to it. In addition, I have examined 3 paralectotypes labeled the same as the lectotype, 2 with labels: Hist. Coll. Nr. 5296/Typus/Zool. Mus. Berlin, and 1 with labels: "5296"/Typus/obscura Gr./Zool. Mus. Berlin. All specimens are in the Gravenhorst collection of the Institut für Spezielle Zoologie und Zoologische Museum, Humboldt Universität, Berlin.



Map 1. Distribution of *Cordalia obscura.*

Type specimens of the Stephens and Hochhuth species, described from Great Britain and Russia, respectively, have not been examined.

Distribution. Cordalia obscura is widely distributed in northeastern United States and eastern Canada, but also is known from localities in Colorado and Washington (Map 1). Specimens have been collected from March through December.

Material examined. 418 specimens. CANADA: *Ontario:* Ottawa, April, June (CNCI) 2; Ottawa, June (CNCI) 1; Prince Edwards Co., March (CNCI) 1; Kent Co., Tilbury, June, October (FMNH) 2; Gananoque, May (CNCI) 5. *Quebec:* Montreal, September (CNCI) 7; Hudson Heights, August (CNCI) 1. UNITED STATES: *Colorado:* Deer Creek Canyon, July (CASC) 3. *Connecticut:* Stony Creek, May (CNCI) 1. *Illinois:* Urbana, Champaign Co., July (INHS) 13; Rogers Park, April (AMNH) 1; Glen View, September (FMNH) 5; Tiedtville, September (FMNH) 2; Cook Co., Hazelcrest, September (FMNH) 26; Cook Co., Homewood, September (FMNH) 1; Cook Co., Homewood, May, September, October (FMNH) 125; Cook Co., Chicago, July (FMNH) 1; JoDaviess Co., 9 mi. S. of Stockton, October (FMNH) 48; Raccoon Grove, 2 mi. S. of Monee, Will Co., October (FMNH) 1; Chicago, July, October, November (ZMB) 13; Beverly Hills, Chicago, June (ZMB) 8. *Maryland:* Baltimore (FMNH) 1. *Massachusetts:* Northampton, June, August, September (CNCI) 4; Arlington, January, March, April (MCZC) 4; Cambridge, March (MCZC) 1; Framingham, October (MCZC) 1; Berlin, June (CUIC) 1; Needham, September (CASC) 10; Ashland, November (MCZC) 1. *Michigan:* Kent Co., Grand Rapids, July, August (ERHC) 26; Bath, March (MSUC) 1; Midland Co., June (MSUC) 1. *New Hampshire:* Rockingham Co., Odiornes Pt. St. Pk., June (DENH) 1. *New Jersey:* Berkeley Heights, May (AMNH) 2; Avenel (AMNH) 1; Bergen Co., Waldwick, August (JHFC) 8. *New York:* Ithaca, May (MCZC) 1; Ithaca, April, August, September, October (CUIC, FMNH) 165; Romulus, April, May (ERHC) 4; Flatbush, Long Island, November (CUIC, FMNH) 6; Brooklyn, March, May (CUIC, AMNH) 2; Olcott, April (CUIC) 1; Staten Island, March, December (AMNH, FMNY) 5; Queens (FMNH) 1; Rochester, August (AMNH) 2; McLean Bogs Reserve, May (ZMB) 1. *Pennsylvania:* Angora, June (MCZC) 1; Easton, March, April, May, June, July, August (CASC, MCZC) 41; Jeannette, October, November (AMNH) 5. *Ohio:* Summit Co., August (INHS) 1. *Washington:* Lake Sutherland, August (CUIC) 1.

Habitat. Horion (1967:199) claimed this species is common in decaying plant material and also in carrion and dung. Hicks (1959) has recorded *C. obscura* from nests of several bird species, including woodpecker, jackdaw, and hoopoe. In America north of Mexico this species has been taken by sifting grass clippings, from a berlese sample of decaying vegetation and compost, from a rotting bracket fungus, from garden soil, and from a bacon bait trap.

2. *Falagriota* Casey

Falagriota Casey, 1906, p. 255; Fenyes, 1912, pp. 20, 22, 26; 1918, p. 18; 1920, p. 156; Leng, 1920, p. 124; Notman, 1920, p. 731; Bernhauer and Scheerpeltz, 1926, p. 573; Bradley, 1930, p. 85; Scheerpeltz, 1934, p. 1569; Blackwelder, 1952, p. 165; Arnett, 1968, p. 289; Seevers, 1978, p. 147.

Type-species: Falagria occidua Casey, fixed by subsequent designation (Fenyes, 1912, p. 22).

Diagnosis. Distinguishing characters of adults are the faintly sulcate pronotum, lack of a comb of denticles on the apical margin of tergum VIII, simple and unmodified scutellum, delimited hypomera, uniform punctation of the elytra, and reduced mesothoracic peritremes (Fig. 77).

Description. Head moderate in size, rounded at base; surface very slightly impressed along median line towards base. Neck narrow, about ¼ as broad as head across eyes. Eyes moderate in size, not prominent. Labrum (Fig. 24A) rounded on sides and front margin. Mandibles (Fig. 24D, E) rather short, stout; right mandible with robust tooth at middle of inner margin; left mandible simple. Maxilla (Fig. 24C) with galea almost as long as lacinia, finely pubescent on membranous apex; lacinia curved towards hooked apex, with a few elongate, curved and stout spines between middle of inner margin and apex, densely pubescent below spines. Maxillary palpus (Fig. 24C) rather elongate; segment 3 longer, very slightly wider than 2; segment 4 long, subuliform. Mentum transversely trapezoidal, truncate in front. Ligula (Fig. 24B) narrow, bifid to about middle. Labial palpus (Fig. 24B) with segment 1 long and broad; segment 2 much shorter and narrower than 1; segment 3 much longer and narrower than 2, nearly cylindrical, subtruncate at apex. Antenna rather long, gradually broadened distally; segments 1–3 subequal in length; segments 4–10 slightly transverse; segment 11 as long as 9 and 10 combined. Prothorax moderately narrowed towards base. Disc finely sulcate, faintly and inconspicuously impressed along median line. Prosternum moderately large, hind margin broadly and obtusely angulate, acutely cusped at middle. Mesospiracular peritremes small, triangular, transverse and broadly separated along median line, membrane broadly exposed. Mesosternal process extending to middle of mesocoxal cavities, narrowed towards subtruncate apex. Metasternal process short, separated from mesosternal process by a long, transversely and strongly convex, depressed isthmus. Mesocoxae narrowly separated. Hypomera clearly delimited from disc by marginal ridge. Scutellum simple, flat, coarsely punctured and pubescent. Elytra slightly longer or, in some specimens, shorter than pronotum, evenly convex; lateral margins nearly straight and subparallel, posterior margins sinuate at outer angles. Abdomen broad at base, nearly as broad as elytra. Terga III–V transversely and broadly impressed at base; impressions moderately, but not densely, coarsely punctate. Apical margin of tergum VIII simple, without fine denticles or fimbriate edge.

The genus *Falagriota* is represented in America north of Mexico by a single species, *occidua* (Casey).

Falagriota occidua (Casey)

Figs. 2, 24, 33, 52, 77, 78, 82, 103; Map 2

Falagria occidua Casey, 1885, p. 285 [type locality, California, Santa Clara Co., Gilroy Hot Springs].

Falagriota occidua; Casey, 1906, p. 256; Fenyes, 1920, p. 156; Bernhauer and Scheerpeltz, 1926, p. 573; Bradley, 1930, p. 85; Seevers, 1978, p. 147.

Falagriota lucida Casey, 1906, p. 257 [type locality, California, Monterey Co., Paraiso Hot Springs].

Falagriota asperula Casey, 1906, p. 257 [type locality, California, Los Angeles Co., Pomona Mts.].

Falagriota picina Casey, 1906, p. 257 [type locality, California, Los Angeles Co., Pomona Mts.].

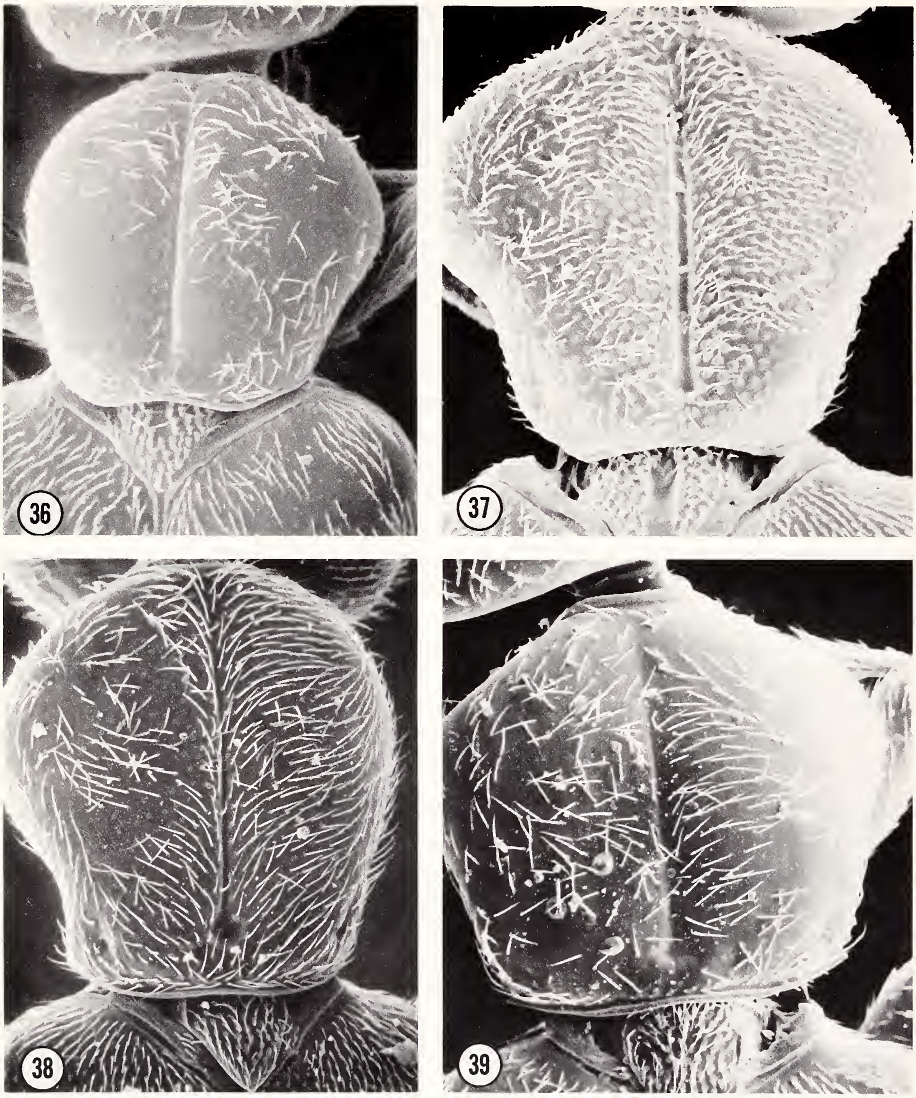
Falagriota evanescens Casey, 1906, p. 258 [type locality, California, Sonoma Co.].

Falagriota collaris Casey, 1906, p. 258 [type locality, California, Humboldt Co., Hoopa Valley].

Falagriota parvipennis Casey, 1906, p. 259 [type locality, California, San Bernardino Mts.].

Diagnosis. Characters of the genus.

Description. Length 2.1–2.8 mm (N = 42; $\bar{x}$ = 2.46 mm). Color rufo-testaceous to rufo-piceous; mouthparts, basal antennal segments and legs usually paler. Habitus as in Figure 2.



Figs. 36–39. Prothoraces of North American Falagriini, dorsal aspect. 36. *Leptagria perexilis.* 37. *Aleodorus scutellaris.* 38. *Lissagria laticeps.* 39. *Borboropora quadriceps.*

Head slightly wider than long, broadly rounded at base. Surface sparsely and very finely punctured and pubescent; surface between punctures smooth and shining. Eyes nearly equal to length of temples. Antenna relatively long, reaching basal third of elytra. Prothorax (Fig. 33) elongate, longer than but equal to width of head, gradually narrowed behind and distinctly converging to base. Disc obsoletely sulcate along median line; transverse subbasal impression present but indistinct. Surface very finely and moderately densely punctured and pubescent; surface between punctures smooth and shining. Scutellum (Fig. 33) simple, flat, coarsely punctured and pubescent. Elytra with surface uniformly, sparsely and finely punctured and pubescent; surface between punctures smooth and polished. Abdomen (Fig. 52) broad at base, not quite as broad as elytra. Terga III–V transversely, shallowly impressed at base; impressions with few to numerous coarse, but separated punctures. Tergal surfaces sparsely, finely punctured and pubescent; surface between punctures smooth and shining.

Male. Eighth tergite with apical margin truncate, simple. Eighth sternite with apical margin broadly, evenly rounded. Median lobe of aedeagus as in Figure 82A. Paramere as in Figure 82B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 103.

Type material. Falagria occidua Casey. Lectotype, here designated, with the following labels: "Cal" [=Gilroy Hot Springs, Santa Clara Co.]/CASEY bequest 1925/ Type USNM 38939/"occidua Cas."; my lectotype designation label is attached to it. Seven paralectotypes have labels identical to those of the lectotype, while four paralectotypes have the labels: "Cal" [=Paraiso Hot Springs, Monterey Co.].

Falagriota lucida Casey. Holotype, with the following labels: "Cal" [=Paraiso Hot Springs, Monterey Co.]/CASEY bequest 1925/Type USNM 38940/"lucida Csy."/ CASEY determ occidua-10.

Falagriota asperula Casey. Holotype, with labels as follows: "Pom Mts., Cal., Sep"/ CASEY bequest 1925/Type USNM 38937/"asperula Csy."

Falagriota picina Casey. Holotype, with the labels: "Pom Mts., Cal., Sep"/CASEY bequest 1925/Type USNM 38937/"picina Csy."

Falagriota evanescens Casey. Holotype, with the following labels: "Sonoma Co., Cal."/CASEY bequest 1925/Type USNM 38938/"evanescens Csy."

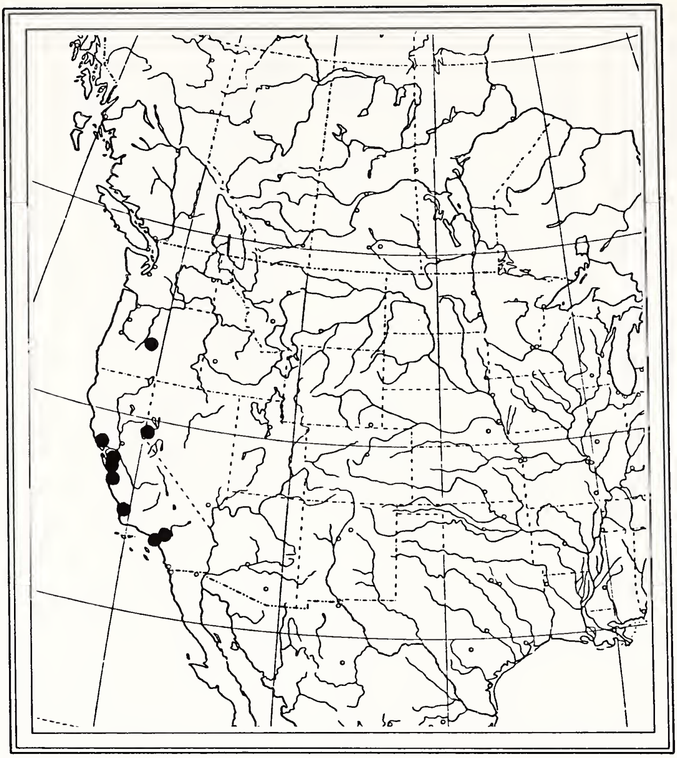
Falagriota parvipennis Casey. Holotype, with labels as follows: "Mts. S.B., 7.17.92, Cal."/CASEY bequest 1925/Type USNM 38934/"Falagriota parvipennis Csy."

Falagriota collaris Casey. Lectotype, here designated, with the following labels: "Cal" [Hoopa Valley, Trinity River, Humboldt Co. (Fort Gaston).]/CASEY bequest 1925/Type USNM 38935/"collaris Csy."; my lectotype designation label is attached to it. One other paralectotype is labeled as the lectotype.

Type specimens of the above 7 nominal species are in the Casey collection of the U.S. National Museum (Natural History), Washington.

Distribution. Falagriota occidua at present is known only from California, Oregon and Nevada (Map 2). Specimens have been collected from February through December.

Material examined. 102 specimens. UNITED STATES: *California:* Pasadena, September, October (MCZC, CASC, AMNH) 8; Los Angeles (MCZC, USNM) 2; Carson (USNM) 7; San Dimas Canyon, San Gabriel Mts., Los Angeles Co., July, August, (INHS) 19; Carmel, July (MCZC) 1; San Bernadino Mts., July (MCZC) 3; Alameda Co., May (USNM) 1; Piedmont, June (AMNH) 1; Oakland, Alameda Co., February (UCBC) 2; Sonoma (USNM) 5; Los Gatos (USNM) 4; Baywood Park, September (CNCI) 1; Baywood Park, San Luis Obispo Co., December (UCRC) 1; Poly Canyon, San Luis Obispo Co., October (CNCI) 2; Mill Valley, Marin Co., October (CASC)



Map 2. Distribution of *Falagriota occidua.*

6; Alhambra, Contra Costa Co., July (CASC) 1; Mt. Diablo, Contra Costa Co., February (UCBC) 1; Perkins Gulch, 7 mi SE of Clayton, Contra Costa Co., July (UCBC) 1; Santa Cruz Co., 14 mi N of Boulder Creek, 2,630 ft, October (AMNH) 11; Pom. Mts., May, September (MCZC) 5; Pomona, September (MCZC) 1; Panamint Mts., April (CASC) 8; San Mateo, February (CUIC) 2; state label only (USNM) 1. *Nevada:* Carson City, July (MCZC) 7. *Oregon:* State label only (MCZC) 1.

Habitat. Little is known about the habitat of this species. Specimens at hand have been collected by sifting debris under dead leaves, and from manzanita (*Arctostaphylos* sp., Ericaceae) duff in California.

3. *Myrmecocephalus* MacLeay

Myrmecocephalus MacLeay, 1873, p. 134.

As subgenus of *Falagria*: Tottenham, 1957, p. 90; Blackwelder, 1952, p. 253; Arnett, 1968, p. 289; Moore and Legner, 1975, p. 414.

As synonym of *Stenagria*: Bernhauer and Scheerpeltz, 1926, p. 575.

Type-species: Myrmecocephalus cingulatus MacLeay, fixed by subsequent designation (Blackwelder, 1952, p. 253) (=*australica* Bernhauer and Scheerpeltz (1926), new name).

Stiliciodes Broun, 1880, p. 95.

As synonym of *Stenagria*: Bernhauer and Scheerpeltz, 1926, p. 575; Blackwelder, 1952, p. 362.

Type-species: Stiliciodes micans Broun, fixed by monotypy (Broun, 1880, p. 95).

Stenagria Sharp, 1883, p. 237; Fenyes, 1912, pp. 20, 23; 1918, p. 18; 1920, p. 159; Notman, 1920, p. 731; Seevers, 1978, p. 146.

As subgenus of *Falagria*: Bernhauer and Scheerpeltz, 1926, pp. 575, 576; Scheerpeltz, 1934, p. 1572; Last, 1979, p. 233.

As synonym of *Myrmecocephalus*: Blackwelder, 1952, p. 358; Tottenham, 1957, p. 90.

Type-species: Stenagria gracilipes Sharp, fixed by subsequent designation (Fenyes, 1912, p. 23).

Lorinota Casey, 1906, p. 238; Fenyes, 1912, pp. 21, 23, 27; 1918, p. 18; 1920, p. 158; Notman, 1920, p. 731.

As synonym of *Stenagria*: Bernhauer and Scheerpeltz, 1926, p. 575; Scheerpeltz, 1934, p. 1572; Seevers, 1978, p. 146.

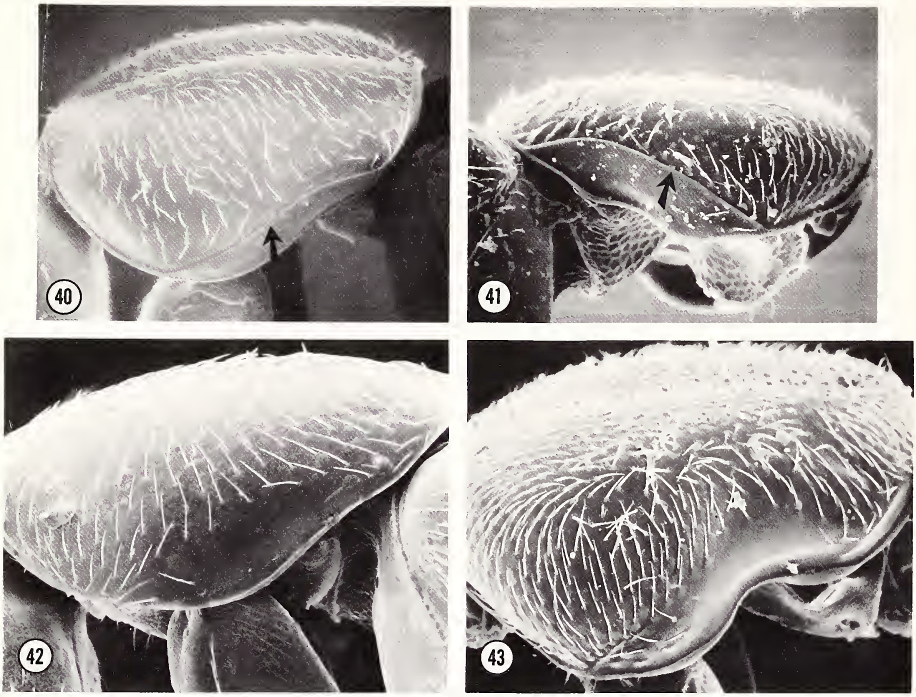
As synonym of *Myrmecocephalus*: Blackwelder, 1952, p. 227.

Type-species: Falagria cingulata LeConte, fixed by subsequent designation (Fenyes, 1912, p. 23).

Biology: Rupertsberger, 1880, p. 115; Ganglbauer, 1895, p. 254; Xambeu, 1910, p. 20.

Diagnosis. Distinguishing adult characters are the absence of a comb of denticles on the apical margin of tergum VIII (Fig. 71), unicarinate scutellum (complete or incomplete) (Fig. 34), delimited hypomera (Fig. 40), long, slender legs, and characteristic habitus (Figs. 3–10).

Description. Head rounded or arcuate-truncate at base, at least as broad as prothorax. Neck very narrow. Eyes moderately large, prominent. Labrum (Fig. 25A) transverse, strongly rounded at sides, subtruncate along frontal margin. Mandibles (Fig. 25D, E) moderate in size, curved towards acute apex; right mandible with a rather obtuse tooth at middle of inner margin; left mandible simple. Maxillae (Fig. 25C) with galea shorter than lacinia, pubescent on membranous apex; lacinia hooked at apex, with 4 or 5 rather long spines between apex and middle of inner margin, finely setose below spines. Maxillary palpus (Fig. 25C) slender, elongate; segment 3 longer, but not wider than 2; segment 4 long, subulate. Mentum (Fig. 25B) strongly transverse, narrowed in front, slightly emarginate on front margin. Ligula (Fig. 25B) deeply bifid almost to base, lobes rounded at apex. Labial palpus (Fig. 25B) with segment 1 long and broad; segment 2 much shorter and narrower than 1; segment 3 longer than 2, obconical, truncate at apex. Antenna moderately long; segments 1–3 subequal in length, elongate; segment 11 almost as long as 9 and 10 combined. Prothorax elongate, convex, very strongly narrowed towards base. Disc deeply sulcate along median line. Prosternum moderately large before front coxae, posterior margin finely cusped at middle. Mesospiracular peritremes large, quadrate, contiguous along median line. Mesosternal process projecting between mesocoxae to about anterior ⅓ to ½, parallel-sided, rounded and free at apex, separated from metasternal process by a short, somewhat depressed isthmus. Mesocoxae moderately separated. Hypomera long and narrow, delimited from pronotal disc by marginal ridge. Scutellum



Figs. 40–43. Prothoraces of North American Falagriini, lateral aspect. 40. *Myrmecocephalus pinalicus*. 41. *Falagrioma thoracica*. 42. *Lissagria laeviuscula*. 43. *Aleodorus scutellaris*. (Arrows indicate marginal ridge delimiting hypomera from pronotal disc.)

densely punctured, finely carinate along median line (Fig. 34), carina incomplete in some specimens of some species (distinct at base only). Elytra much broader than prothorax, longer than broad; parallel-sided or slightly arcuate posteriorly along lateral margins; posterior margins sinuate at outer angles. Surface evenly convex, finely and uniformly punctured and pubescent, with or without fine surface microsculpture. Abdomen elongate, parallel-sided. Terga III–V transversely impressed at base; impressions punctured or impunctate. Tergal surfaces smooth, with or without fine microsculpture; finely, sparsely or densely punctured and pubescent. Apical margin of tergum VIII simple.

The genus *Myrmecocephalus* is found in all major zoogeographic regions. Eight species occur in America north of Mexico, including two described as new in this paper (*gatineauensis* and *sculpturatus*).

Remarks. There has been confusion regarding the correct name to apply to this generic concept. The genera *Lorinota* Casey and *Stenagria* Sharp were first listed as synonyms of *Myrmecocephalus* MacLeay, an Australian genus, by Blackwelder (1952). Seevers (1978), however, remained unconvinced of this decision, stating that "these synonymies require confirmation," and instead recognized the genus *Stenagria*, based on a Central American species. I have examined specimens of the type species of all genera in question and conclude that all are congeneric. Adherence to priority of publication makes the generic name *Myrmecocephalus* MacLeay valid.

KEY TO SPECIES OF *Myrmecocephalus*

1. Small, usually less than 3.0 mm; abdomen bicolored (basal 2 segments generally light in color, apical segments dark) (Figs. 3–5) 2
– Larger, usually greater than 3.0 mm; abdomen unicolorous 4
2. Head broadly rounded at base (Fig. 3); impression of tergum III coarsely and rugosely sculptured (Fig. 53) .... *cingulatus* (LeConte)
– Head distinctly arcuate-truncate at base (Fig. 4); impression of tergum III not as above 3
3. Impression of tergum III impunctate, smooth and polished, or nearly so (Fig. 54); posterior angles of pronotum slightly produced as a small projection; spermatheca as in Figure 105 .... *concinnus* (Erichson)
– Impression of tergum III usually coarsely punctate at the middle; posterior angles of pronotum not produced; spermatheca as in Figure 106 .... *gracilis* (Casey)
4. Dorsal surface of head, pronotum and elytra with reticulate microsculpture (Fig. 64) .... *sculpturatus* sp. nov.
– Dorsal body surfaces without reticulate microsculpture; microsculpture, when present, consisting of transverse wavy microlines (Figs. 67–69) 5
5. Abdominal terga with microsculpture 6
– Abdominal terga without microsculpture, smooth and polished (Fig. 66) .... *arizonicus* (Casey)
6. Abdominal terga very minutely and sparsely punctured throughout; surface slightly sculptured with transverse wavy microlines (Figs. 68, 69) 7
– Abdominal terga finely and closely punctured throughout; surface densely sculptured with a fine network of transverse microlines (Fig. 67) .... *gatineauensis* sp. nov.
7. Elytral surface with distinct microsculpture of transverse microlines (similar to that in Fig. 68); impression of tergum III usually impunctate .... *caviceps* (Casey)
– Elytral surface without microsculpture; impression of tergum III generally coarsely punctured .... *pinalicus* (Casey)

Myrmecocephalus cingulatus (LeConte)

Figs. 3, 25, 34, 53, 83, 104; Map 3

Falagria cingulata LeConte, 1866, p. 370 [type locality, New York].
Myrmecocephalus cingulata; Moore and Legner, 1975, p. 415.
Lorinota tenuicornis Casey, 1906, p. 243 [type locality, Iowa, Iowa City].
Lorinota sinuosa Casey, 1911, p. 178 [type locality, Wisconsin, Bayfield].

Diagnosis. Adults of *Myrmecocephalus cingulatus* are very similar to those of *M. concinnus* and *gracilis* in size and color pattern, but are easily distinguished by the broadly rounded head (Fig. 3), and the coarsely and rugosely punctured basal impression of tergum III (Fig. 53).

Description. Length 2.3–3.3 mm (N = 91; $\bar{x} = 2.68$ mm). Color pale rufocastaneous; elytra paler at base in some specimens; apical four abdominal segments dark. Habitus as in Figure 3.

Head (Fig. 3) orbicular, convex, longer than broad, broadly and evenly rounded at base. Surface sparsely and minutely punctured and pubescent; surface between punctures smooth and shining. Eyes slightly shorter than length of temples. Antenna long, reaching apical third of elytra. Prothorax (Figs. 3, 34) narrow and elongate, cylindrical, convex, distinctly narrower than head, broadest across anterior third, strongly converging to base; hind margins distinctly but narrowly reflexed. Disc deeply sulcate along median line except at extreme apex, sulcus ending in a small, deep, subbasal fovea. Surface strongly, evenly convex, sparsely and minutely punctured and pubescent; punctures more dense and asperate towards sulcus; surface between punctures smooth and shining. Scutellum finely carinate (Fig. 34), carina sometimes extending to apex but usually confined to base; surface sparsely, finely punctured and pubescent. Elytra with surface moderately, sparsely and minutely punctured; surface between punctures smooth and shining. Abdomen (Fig. 53) narrowed at base, parallel-sided. Terga III–V strongly and transversely impressed at base; tergum III narrow at base and more dilated caudad; impression of tergum III coarsely and rugosely punctured (Fig. 53); impressions of terga IV and V narrow, coarsely punctate at middle. Tergal surfaces very minutely and densely punctured and pubescent; surface between punctures very finely but distinctly sculptured with fine transverse microlines.

Male. Eighth tergite with apical margin truncate, simple. Apical margin of eighth sternite broadly rounded. Median lobe of aedeagus as in Fig. 83A. Paramere as in Figure 83B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 104.

Type material. Falagria cingulata LeConte. Lectotype, here designated, with labels as follows: yellow disc [=Central Valley or Western States]/Type 6239/"F. cingulata *LeC.*"; my lectotype designation label is attached to it. In addition, I examined five paralectotypes with labels as follows: yellow disc/"cingulata 2"; pink disc [=Middle States]/"cingulata 3"; "Penn."/"cingulata 4"; "Ill."/"cingulata 5"; and "Stone Cr., Lee Co., Va."/113/"cingulata 6." All specimens are in the LeConte collection of the Museum of Comparative Zoology, Harvard University, Cambridge.

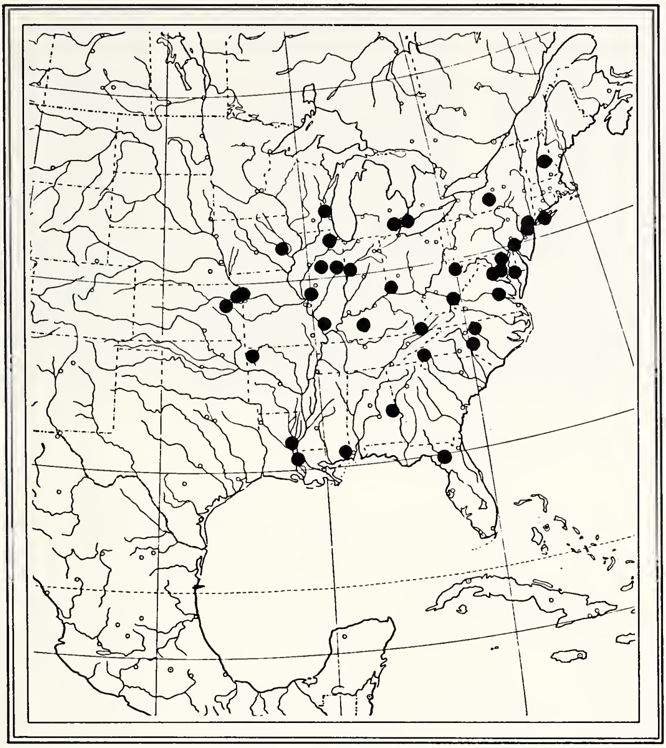
Lorinota tenuicornis Casey. Lectotype, here designated, with the following labels: "Iowa City, Iowa"/CASEY bequest 1925/Type USNM 38916/"tenuicornis Csy."; my lectotype designation label is attached to it. In addition, I also examined two paralectotypes with the labels "Cin., O." and "Ia."

Lorinota sinuosa Casey. Holotype, with labels as follows: "Bayfld., Wis., Wickham"/CASEY bequest 1925/Type USNM 38915/"sinuosa Csy."

Type specimens for the above two species are in the Casey collection of the U.S. National Museum (Natural History), Washington.

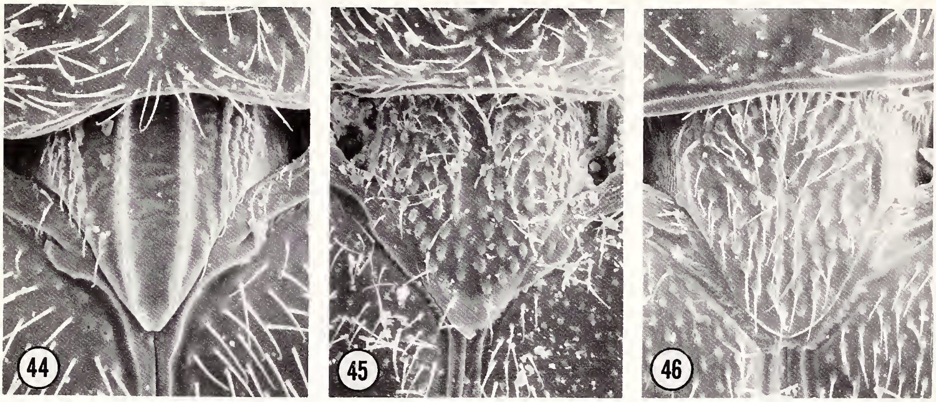
Distribution. Myrmecocephalus cingulatus is widely distributed in eastern North America, from Nova Scotia and Ontario south to Louisiana and Alabama and west to eastern Kansas (Map 3). Specimens have been collected from March through December.

Material examined. 161 specimens. CANADA: *Nova Scotia:* Wentworth, Cumberland Co., May (CNCI) 1. *Ontario:* Kent Co., Tilbury, September (FMNH) 1. UNITED STATES: *Alabama:* Auburn, March, April (CNCI) 8; Opelika, March (CNCI) 2. *Arkansas:* Washington Co., March (INHS) 1. *District of Columbia:* Washington (USNM) 3. *Florida:* Alachua Co., 7 mi. SE Branford, Santa Fe River, May



Map 3. Distribution of *Myrmecocephalus cingulatus*.

(DENH) 1. *Illinois:* Gillespie, September (INHS) 1; Urbana, March (INHS) 1; Urbana, April, May, July, August, September (INHS, FMNH) 6; White Heath, March (INHS) 1; Aurora, September (FMNH) 1; Pine Hills Field Sta., Union Co., May (CNCI) 1; Kane Co., Forest Preserve on AH 30, 3 mi S of Lily Lake, November (FMNH) 1; McLean Co., nr. Bloomington, Funk's Grove, September (FINH) 6; state label only (MCZC) 1. *Indiana:* Parke Co., 4 mi W of Rockville (Hajji Hollow), June (FMNH) 2; Smith, August (FMNH) 1. *Iowa:* Iowa City (FMNH) 1; state label only, September (USNM) 1. *Kansas:* Leavenworth (USNM) 2; Topeka, November (USNM, MCZC) 7; state label only (INHS, USNM) 3. *Kentucky:* Edmonton Co., Mammoth Cave Nat'l. Pk., Bruce Hollow, August (FMNH) 1. *Louisiana:* Concordia Pa., 5 mi W of Ferriday, May (CNCI) 1; state label only (MCZC) 1. *Maryland:* Bladensburg, October (USNM) 3; Cabin John, May (USNM) 1; Oakland (USNM) 1; Dorchester Co., nr. Lloyds, July (USNM) 4; Baltimore, July (CASC) 8; Prince Georges Co., Patuxent Wildlife Refuge, June (DENH) 2. *Michigan:* Ann Arbor (USNM) 1; state label only (MCZC) 2. *Mississippi:* Lucedale, February, April (CUIC) 3. *Missouri:* Platte City, May (UNHS) 1. *New Hampshire:* state label only (MCZC) 1. *New Jersey:* Highlands (AMNH) 1; Jamesburg, September (FMNH) 1; Ft. Lee, April (USNM) 1. *New York:* Ithaca, November (CUIC) 1; Lottwood, Flatbush, L.I. (AMNH) 1; Long



Figs. 44–46. Scutella of North American Falagriini, dorsal aspect. 44. *Falagria dissecta.* 45. *Aleodorus intricatus.* 46. *Borboropora quadriceps.*

Island label only (USNM) 4. *North Carolina:* Black Mts., June, July, September (AMNH) 3; Lake Toxaway (AMNH) 1; West End, December (FMNH) 1; Highlands, June (MCZC) 1; Orange Co., March (CUIC) 1; state label only (INHS) 3. *Ohio:* Cincinnati (CUIC, MCZC) 4. *Pennsylvania:* Manyunk, October (CASC) 2; Chestnut Hill, July, August (MCZC) 4; Allegheny (ICCM) 2; West View, May (ICCM) 1; state label only (FMNH) 1. *Virginia:* E. Falls Church, September (USNM) 1; Stone Cr., Lee Co. (USNM) 5; Straight Cr., Lee Co. (USNM) 1; Falls Church, May (USNM) 2; Rosslyn (USNM) 1; Great Falls, August, September (USNM) 2; Fairfax Co., September (USNM) 1. *West Virginia:* Grafton (USNM) 6; White Sulphur Springs, July (FMNH) 1; state label only (USNM, MCZC) 24. *Wisconsin:* West Bend, Washington Co., August (CNCI) 1.

Habitat. Specimens at hand have been taken from under bark, from fungus on a stump, from a sawdust pile, and from various litter.

Myrmecocephalus concinnus (Erichson)

Figs. 4, 54, 84, 105; Map 4

Falagria concinna Erichson, 1840, p. 51 [type locality, Brasil].
Myrmecocephalus concinna; Nakane et al., 1963, p. 98.
Falagria longipes Wollaston, 1871, p. 284 [type locality, Madeira, western outskirts of Funchal].
Falagria fovea Sharp, 1874, p. 3 [type locality, Japan].
Falagria parae Sharp, 1876, p. 41 [type locality, Amazon Valley, Pará, Brasil].
Falagria currax Sharp, 1880, p. 37 [type locality, Hawaiian Islands].
Lorinota bilimbata Casey, 1906, p. 245 [type locality, Iowa, Iowa City]. **New Synonym.**

Diagnosis. Adults closely resemble those of *cingulatus* but are distinguishable by the arcuate-truncate head (Fig. 4), impunctate basal impression of abdominal tergum III in most specimens (Fig. 54), and projecting basal angles of the pronotum. Females can be separated from those of *cingulatus* by the characteristically shaped spermatheca (Fig. 105), and notched apex of sternum VIII.

Description. Length 2.5–3.4 mm (N = 32; $\bar{x} = 2.74$ mm). Color light brownish to reddish yellow; intermediate antennal segments and center of elytra usually darker brown; terminal four abdominal segments dark brown to nearly piceous. Habitus as in Figure 4.

Head small, round, distinctly arcuate-truncate at base (Fig. 4). Surface densely and finely punctured and pubescent; surface between punctures smooth and polished. Eyes equal to length of temples. Antenna moderate in length, reaching to anterior third of elytra. Prothorax (Fig. 4) elongate-cylindrical, convex, slightly longer than head, broadest at anterior third, strongly converging to base; basal margin distinctly reflexed; basal angles acutely produced, projecting. Disc deeply sulcate along median line, except at extreme apex, sulcus ending in a shallow, round, subbasal fovea; transverse impression radiating from fovea on each side. Surface densely and very finely punctured and pubescent; surface between punctures smooth and shining. Scutellum finely carinate along median line, carina extending to or nearly to apex; surface coarsely and densely punctured and pubescent. Elytra with surface densely, uniformly and finely punctured and pubescent; surface between punctures smooth and shining. Abdomen (Fig. 54) narrowed at base, but nearly as broad at base as elytra. Terga III–V slightly impressed at base; basal impressions without punctures (Fig. 54), or with only few obsolete punctures. Tergal surfaces finely punctured and pubescent; surface between punctures indistinctly sculptured with fine transverse microlines.

Male. Eighth tergite with apical margin truncate, simple. Eighth sternite with apical margin broadly rounded. Median lobe of aedeagus as in Figure 84A. Paramere as in Figure 84B.

Female. Eighth tergite with apical margin as in male. Eighth sternite with apical margin deeply notched at middle. Spermatheca as in Figure 105.

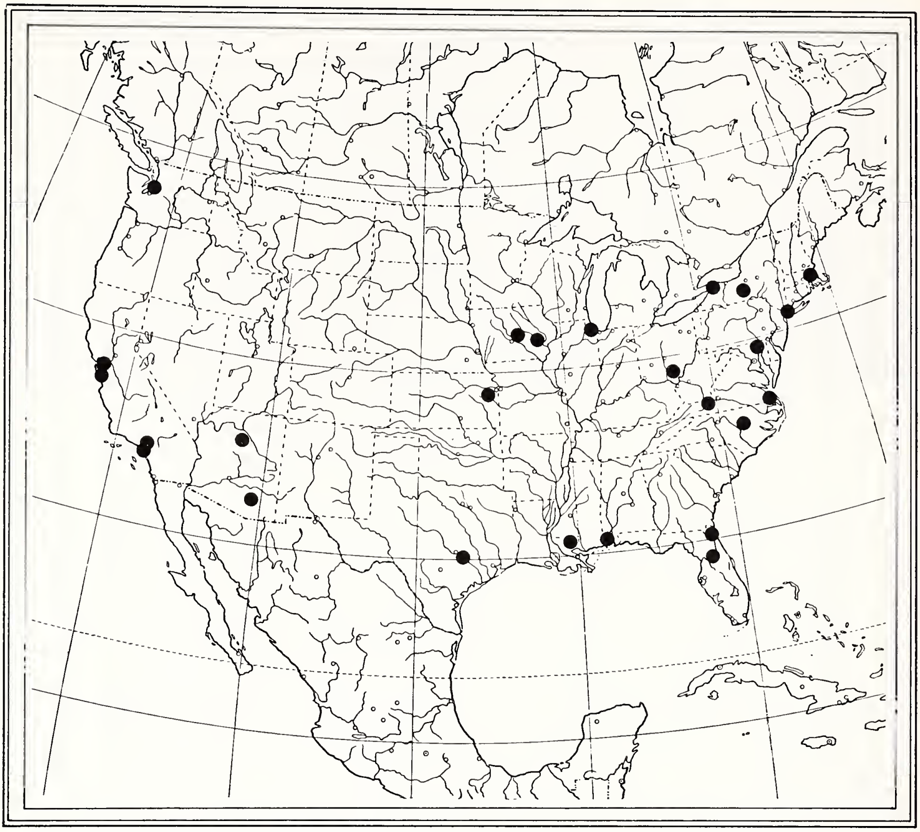
Type material. Falagria concinna Erichson. Lectotype, here designated, with labels: "Brasil, Germ., Hist. Coll. Nr. 5288"/Typus/Zool. Mus. Berlin; my lectotype designation label is attached to it. In addition, I examined one other paralectotype with labels identical to the lectotype. One other paralectotype had the labels: 5288/Typus/ "concinna Er., Bras., Gm."/Zool. Mus. Berlin, while two others were labeled: "Columb. Otto, Hist. Coll. Nr. 5288"/Typus/Zool. Mus. Berlin. All specimens are in the Erichson collection of the Institut für Spezielle Zoologie und Zoologische Museum, Humboldt-Universität, Berlin.

Lorinota bilimbata Casey. Lectotype, here designated, with the following labels: "Iowa City, Iowa"/CASEY bequest 1925/Type USNM 38919/"bilimbata Csy."; my lectotype designation label is attached to it. One paralectotype is labeled: "Ia."/ "paratype-2." Both specimens are in the Casey collection of the U.S. National Museum (Natural History), Washington.

Type specimens of the Sharp and Wollaston species were not examined.

Distribution. Myrmecocephalus concinnus, a cosmopolitan species, is transcontinental in North America (Map 4). Specimens have been collected from March through June, and during January, August, October and November.

Synonymy. The type specimens of *bilimbata* are indistinguishable from specimens



Map 4. Distribution of *M. concinnus.*

of *concinnus.* I could not find sufficient characters to separate the two. The characters given by Casey (1906) for *bilimbata* correspond to the same characters diagnostic for *concinnus.*

Material examined. 44 specimens. UNITED STATES. *Alabama:* Mobile (CASC) 3. *Arizona:* Flagstaff (FMNH) 1. *California:* Los Angeles, June (FMNH) 1; Los Gatos (USNM) 1; Strawberry Canyon (Campus Univ. of Calif.)? Berkeley, Alameda Co., October (FMNH) 1; Evey Can., San Gabriel Mts., N of Claremont, June (INHS) 1. *Florida:* Jacksonville (AMNH) 1; Ocala, Marion Co., April (JHFC) 4. *Illinois:* Chicago (USNM) 3. *Iowa:* Iowa City (USNM) 1; state label only (FMNH) 1. *Kansas:* Lawrence (AMNH) 1. *Louisiana:* Natalbany, June (USNM) 4. *Maryland:* Edgewood, November (CUIC) 1; state label only (DEFW) 1. *Massachusetts:* W. Roxbury, January (MCZC) 1. *New York:* Olcott, October (CUIC) 1; Ithaca (USNM) 1; New York, March (USNM) 1. *North Carolina:* Raleigh, August (NCSC) 1. *Ohio:* Vinton Co., Lake Hope, November (FMNH) 1. *Texas:* Bastrop St. Park, nr. Bastrop, June (ERHC) 10. *Virginia:* Munden, May (MCZC) 1: Newport, Giles Co., August (JHFC) 1. *Washington:* Seattle (intercept Japan, lily bulbs) (UCRC) 1.

Habitat. Adults of this species have been collected from along a stream bed, from under logs, from oak and pine duff, and from a blacklight trap.

Myrmecocephalus gracilis (Casey), **Revised Status**

Figs. 5, 85, 106; Map 5

Lorinota gracilis Casey, 1906, p. 244 [type locality, North Carolina, Tryon].
Myrmecocephalus gracilis; Moore and Legner, 1975, p. 415 (as synonym of *cingulatus*).
Lorinota parva Casey, 1906, p. 244 [type locality, Florida, Enterprise]. **New Synonym.**

Diagnosis. Adults of this species are extremely similar to those of *M. concinnus* in color and size, but may be distinguished by the basal impression of abdominal tergite III often with distinct punctures, and the broadly rounded basal angles of the pronotum.

Description. Length 2.0–3.0 mm ($N = 22$; $\bar{x} = 2.39$ mm). Color light to dark rufotestaceous; three basal and apical antennal segments, mouthparts, humeri, apices of elytra, basal 2 abdominal segments, tibiae and tarsi paler. Habitus as in Figure 5.

Head (Fig. 5) moderate in size, convex, nearly as broad as prothorax at broadest part, broadly arcuate-truncate at base, hind angles broadly rounded. Surface sparsely and minutely punctured and pubescent; surface between punctures smooth and shining. Eyes as long as temples. Antenna moderately short, stout, reaching middle of elytra. Prothorax (Fig. 5) elongate, slightly longer than head, broadest at anterior third, gradually converging posteriorly; basal margin evenly convex, very narrowly reflexed; basal angles not produced, broadly rounded. Disc deeply sulcate along median line, except at extreme apex, sulcus ending in a deep, round subbasal fovea. Surface sparsely and finely punctured and pubescent; punctures more coarse and asperate near sulcus; surface between punctures smooth and shining. Scutellum finely carinate at base; surface densely and coarsely punctured and pubescent. Elytra with surface sparsely, minutely and uniformly punctured and pubescent; surface between punctures smooth and polished. Abdomen broad at base, much narrower than elytra. Tergum III strongly and broadly impressed at base; terga IV and V moderately impressed at base. Impression of tergum III with coarse, well-separated punctures at the middle in most specimens; impressions of terga IV and V usually impunctate or with few subobsolete punctures. Tergal surfaces densely and coarsely punctured and pubescent; surface between punctures with minute microsculpture consisting of fine, transverse microlines.

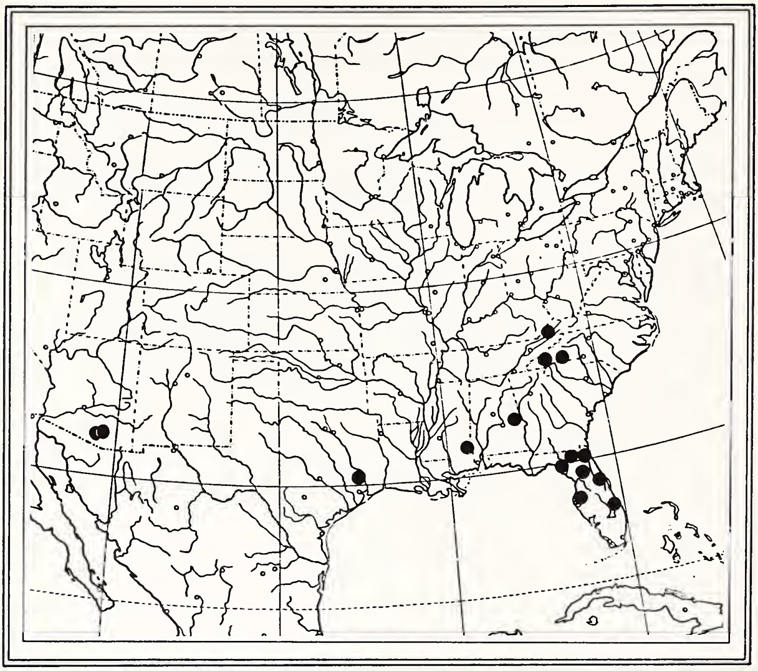
Male. Eighth tergite with apical margin broadly truncate, simple. Apical margin of eighth sternite broadly, evenly rounded. Median lobe of aedeagus as in Figure 85A. Paramere as in Figure 85B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 106.

Type material. Lorinota gracilis Casey. Holotype, with labels as follows: "Tryon NC"/Pinus/CASEY bequest 1925/Type USNM 38917/"gracilis Csy."

Lorinota parva Casey. Holotype with the following labels: "erprise, Fla." (=Enterprise)/CASEY bequest 1925/Type USNM 38918/"parva Csy."

Type specimens of the above two species are in the Casey collection of the U.S. National Museum (Natural History), Washington.



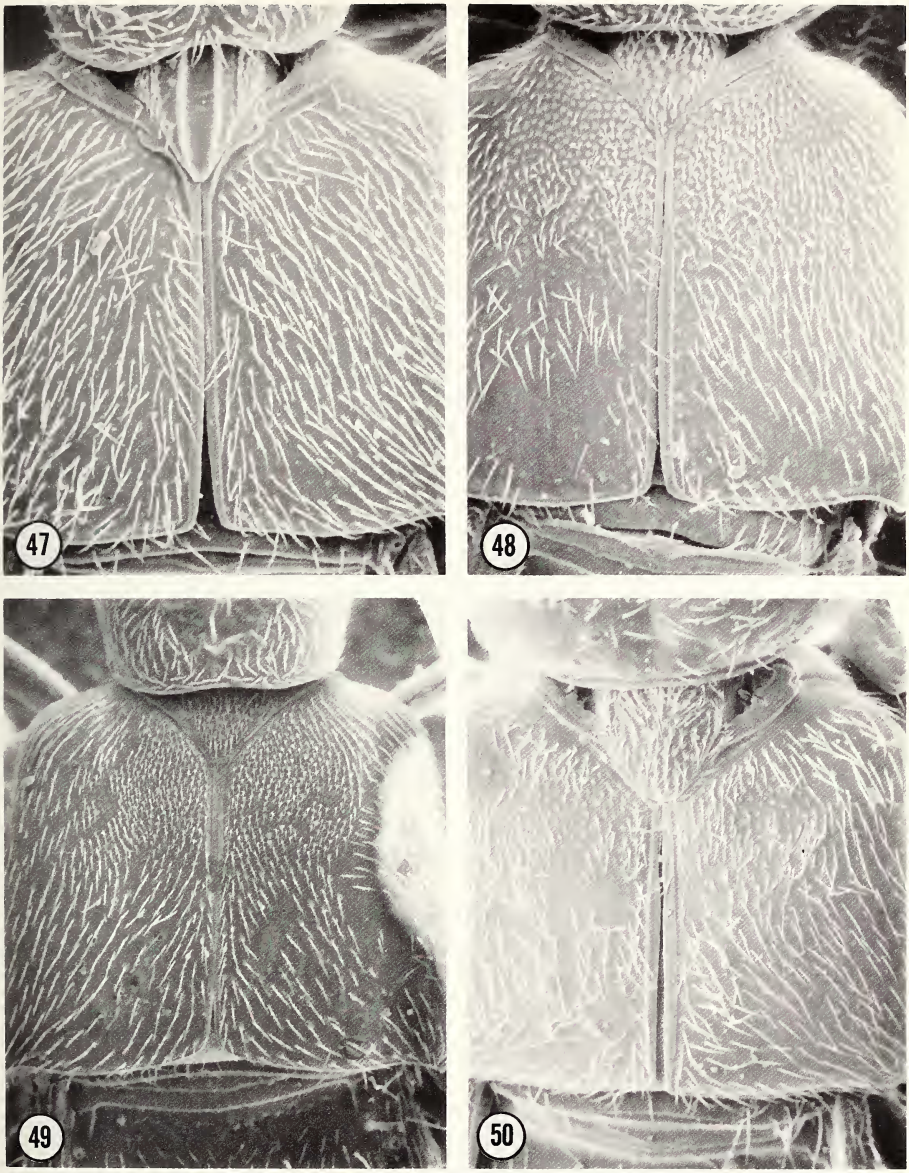
Map 5. Distribution of *M. gracilis.*

Distribution. Myrmecocephalus gracilis occurs in southern United States, from Virginia and North Carolina south to Florida and west to Texas and southern Arizona (Map 5). Specimens have been collected from February through November.

Synonymy. Because the holotype of *parva* is similar to specimens of *gracilis* with respect to body color, configuration of the head capsule, and the impression of abdominal tergum III with some coarse punctures at the middle, they are synonymized herein.

Material examined. 30 specimens. UNITED STATES: *Alabama:* Auburn, April (CUIC) 1. *Arizona:* Pima Co., Tucson, October (AMNH) 2; Saq. Nat'l. Mon., Pima Co., November (UAIC) 1; Santa Catalina foothills, May (FMNH) 1. *Florida:* Enterprise, May, June (USNM, SEMC) 4; Tampa, March (USNM) 1; Jacksonville, March (FMNH) 1; St. Lucie Co., Lakewood Park, April–June (JHFC) 1; Lakewood Park (JHFC) 1; Dixie Co., Pine Landing, July (JHFC) 1; Columbia Co., Osceola Nat'l. For., 2.5 mi W of Jct. S236 and S232 on S236, February (FSCA) 2; Marion Co., Lake Eaton, April (FSCA) 3; Columbia and Baker county line, Jct. Rt. 90, November (FSCA) 1; Alachua Co., 4 mi W Jct. Hwys. 26 & 75, May (DENH) 1. *Mississippi:* Leakesville, April (CUIC) 6. *North Carolina:* Black Mts., May (AMNH) 1; Tryon (USNM) 1. *Texas:* ?Conroe, February (FMNH) 1. *Virginia:* Penington Gap, July (USNM) 1.

Habitat. Specimens of this species have been taken under the bark of pine and



Figs. 47–50. Elytra of North American Falagriini, dorsal aspect. 47. *Falagria dissecta.* 48. *Falagrioma thoracica.* 49. *Lissagria laeviuscula.* 50. *Borboropora quadriceps.*

cypress logs in Florida, a rotting saguaro cactus in Arizona, and incandescent light and blacklight traps in Florida.

Myrmecocephalus sculpturatus, new species

Figs. 6, 64, 65, 71, 86, 107; Map 6

Diagnosis. This species is one of the most distinctive of the genus in America north of Mexico; it can be readily recognized by the presence of reticulate microsculpture on the dorsal body surfaces (Fig. 64).

Description. Length 3.4–3.9 mm (N = 6; $\bar{x} = 3.71$ mm). Color light to dark rufotestaceous; mouthparts, antennal segments, legs and tarsi paler. Habitus as in Figure 6.

Head moderate in size, slightly longer than broad, lateral margins broadly and evenly rounded, broadly rounded at base. Surface behind antennal fossae slightly but broadly depressed and with conspicuous reticulate microsculpture, shining. Eyes much shorter than length of temples. Antenna moderately long, reaching apex of elytra. Prothorax (Fig. 6) elongate, longer than head; anterior angles broadly and evenly rounded; lateral margins narrowed and converging to base; posterior margin broadly convex, finely margined and reflexed. Disc deeply sulcate along median line, except at extreme apex, sulcus ending in a round, deep, subbasal fovea. Surface finely and sparsely punctured and pubescent; surface between punctures with fine reticulate microsculpture (Fig. 64). Scutellum with broad carina at base, surface coarsely and moderately densely punctured and pubescent, also with reticulate microsculpture. Elytra with surface between punctures with fine but distinct reticulate microsculpture (as in Fig. 64). Abdomen broad at base, nearly as broad as elytra. Terga III–V transversely impressed at base; impression of tergum III coarsely punctured. Tergal surfaces rather densely punctured and pubescent; surface between punctures coarsely shagreened (Fig. 65).

Male. Eighth tergite with apical margin arcuate-truncate. Eighth sternite with apical margin broadly and evenly rounded. Median lobe of aedeagus as in Figure 86A. Paramere as in Figure 86B.

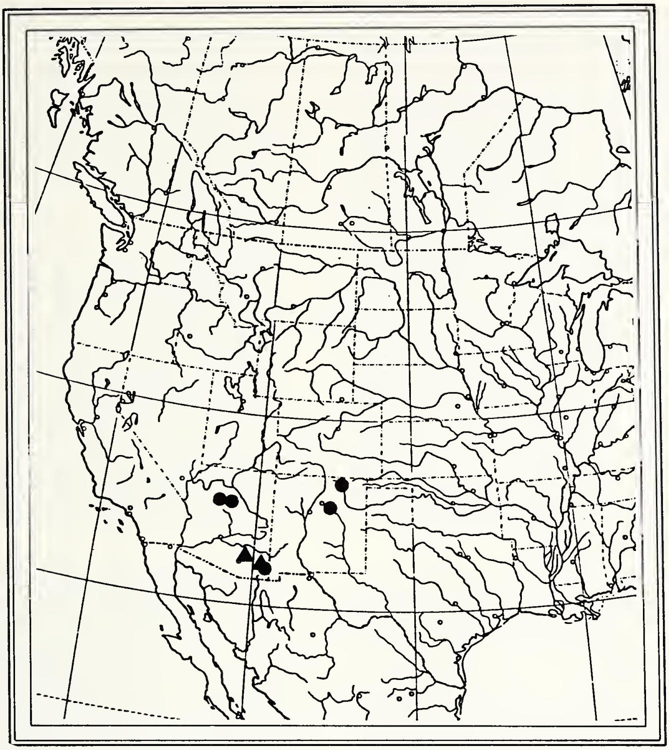
Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 107.

Type material. Holotype, male, with labels: USA: Ariz., Cochise Co., W. Slope Chiricahua Mts., Barfoot Peak, 8,250 ft, V-4-1968/Under bark of log, L. Herman/ HOLOTYPE Myrmecocephalus sculpturatus n. sp., E. R. Hoebeke 1981. The type is deposited in the collection of the American Museum of Natural History (AMNH), New York, NY.

Paratypes, 5, in the collections of the American Museum of Natural History, and the Field Museum of Natural History, Chicago.

Distribution. Myrmecocephalus sculpturatus at present is known only from the mountains of southeastern Arizona (Map 6) at elevations of 8,250–8,500 feet. Specimens have been collected in May.

Material examined. 6 specimens. UNITED STATES. *Arizona:* Cochise Co., W. Slope Chiricahua Mts., Barfoot Peak, 8,250 ft, May (AMNH) 3; St. Catalina Mts., 8,500 ft, May (FMNH) 3.



Map 6. Distribution of *M. sculpturatus* (triangles) and *M. caviceps* (circles).

Habitat. Little is known about the habitat of this species. Specimens at hand have been collected from under bark.

Etymology. The specific epithet is derived from the Latin *sculpto, sculptus,* meaning to carve, engrave, or cut, and referring to the reticulate microsculpture on the dorsal body surfaces.

Myrmecocephalus arizonicus (Casey)

Figs. 7, 66, 87, 108; Map 7

Lorinota arizonica Casey, 1906, p. 241 [type locality, Arizona, Williams].
Myrmecocephalus arizonica; Moore and Legner, 1975, p. 415.
Lorinota acomana Casey, 1906, p. 242 [type locality, New Mexico, Cloudcroft].
Lorinota fontinalis Casey, 1906, p. 242 [type locality, Colorado, Colorado Springs].

Diagnosis. Adults of *M. arizonicus* can be distinguished from those of other species of the genus by the complete absence of microsculpture on the dorsal body surfaces (Fig. 66); the integument is smooth and shining between punctures.

Description. Length 3.1–3.9 mm (N = 98; $\bar{x}$ = 3.42 mm). Color uniformly pale rufo-piceous; mouthparts, basal antennal segments and legs usually paler. Habitus as in Figure 7.

Head (Fig. 6) moderate in size, broadly arcuate-truncate at base; hind angles broadly rounded. Surface flattened behind antennae to occiput, sparsely and very minutely punctured and pubescent; surface between punctures smooth and shining. Eyes slightly prominent, much shorter than length of temples. Antenna moderately long, slightly incrassate distally, nearly reaching to first abdominal segment. Prothorax (Fig. 6) elongate, distinctly narrower than head, evenly convex dorsally, strongly converging to base; posterior margin finely reflexed. Disc deeply sulcate along median line except at extreme apex, sulcus ending in a round, deep, subbasal fovea. Surface moderately sparsely and minutely punctured and pubescent; punctures slightly more asperate and coarse towards sulcus; surface between punctures smooth and polished. Scutellum broadly carinate at base along median line, not extending to apex; surface densely and coarsely punctured and pubescent. Elytra with surface moderately sparsely, minutely and uniformly punctured and pubescent; surface between punctures smooth and shining. Abdomen relatively broad at base, narrower than elytra. Terga III–V broadly and transversely impressed at base; impressions coarsely and densely punctured. Tergal surfaces moderately densely and finely punctured and pubescent; punctures more asperate on basal segments; surface (Fig. 66) between punctures smooth and shining.

Male. Eighth tergite with apical margin truncate, simple. Eighth sternite with apical margin broadly rounded. Median lobe of aedeagus as in Figure 87A. Paramere as in Figure 87B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 108.

Type material. Lorinota arizonica Casey. Lectotype, here designated, with labels as follows: "Ari." [=Williams, Arizona, Mr. H. F. Wickham]/CASEY bequest 1925/ Type USNM 38912/"arizonica Csy."; my lectotype designation label is attached to it. Two other paralectotypes have labels identical to the lectotype.

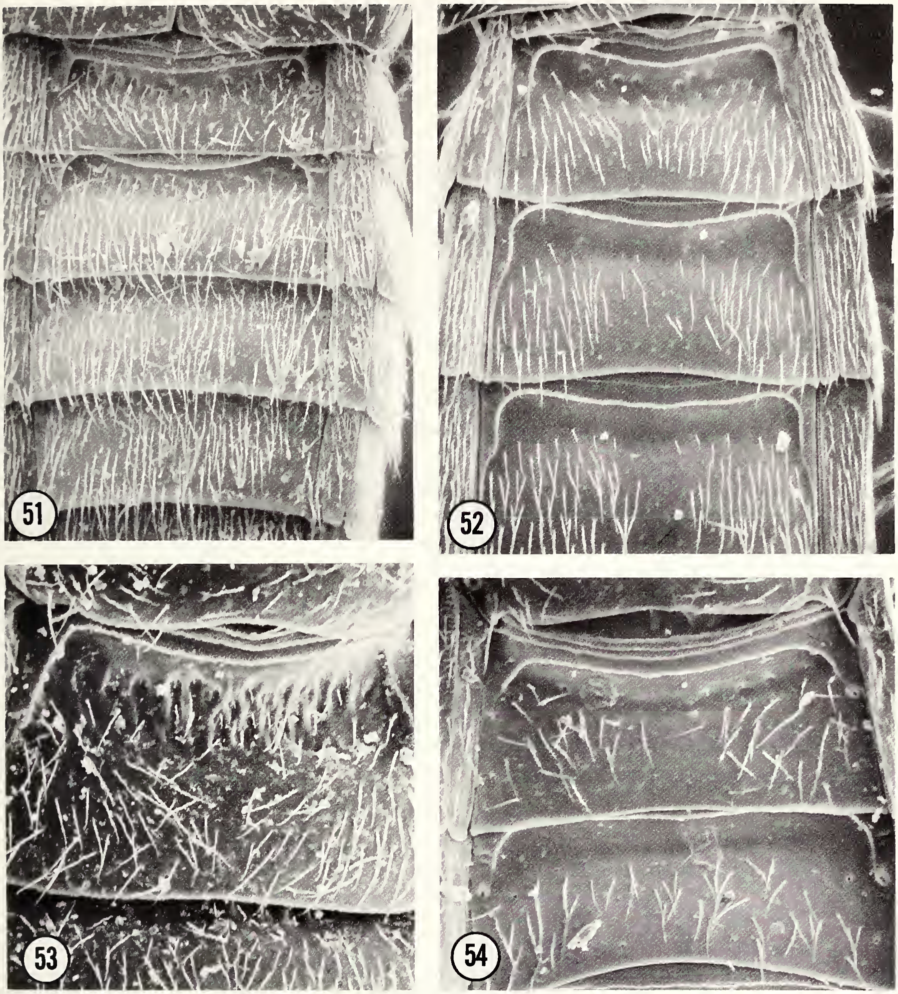
Lorinota acomana Casey. Lectotype, here designated, with the following labels: "Cloudcroft, New Mex."/CASEY bequest 1925/Type USNM 38913/"acomae Csy."; my lectotype designation label is attached to it. Three other paralectotypes also have labels identical to the lectotype.

Lorinota fontinalis Casey. Lectotype, here designated, with labels as follows: "Colo. Spr., Col., H. F. Wickham, June 15–30 '96, 6,000–7,000 ft."/CASEY bequest 1925/ Type USNM 38914/"fontinalis Csy."; my lectotype designation label is attached to it. One paralectotype has labels identical to the lectotype.

Type specimens of the above 3 species are in the Casey collection of the U.S. National Museum (Natural History), Washington.

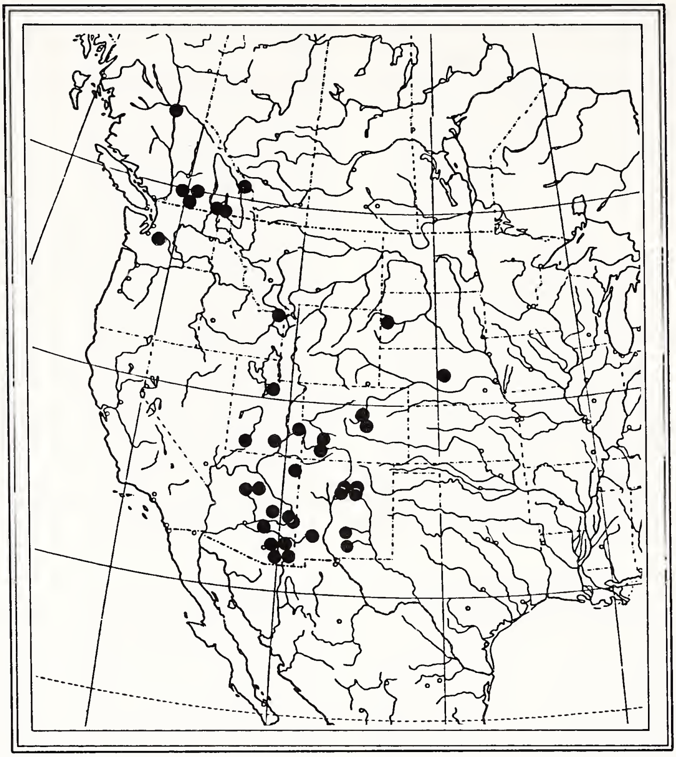
Distribution. Myrmecocephalus arizonicus is widely distributed in western North America (especially at higher elevations), from southern British Columbia south through the mountains of Idaho, Utah, Colorado, Arizona and New Mexico (Map 7). Specimens have been collected from March through October.

Material examined. 661 specimens. CANADA: *British Columbia:* 7 mi N of Oliver, June (CNCI) 1; McLeod Meadows, Kootenay Nat'l. Pk., July (CNCI) 9; Kimpton Cr., Kootenay Nat'l. Pk., 4,000 ft, July (CNCI) 1; Prince George, May (CNCI) 1; 4



Figs. 51–54. Basal abdominal segments of North American Falagriini, dorsal aspect. 51. *Cordalia obscura*. 52. *Falagriota occidua*. 53. *Myrmecocephalus cingulatus*. 54. *M. concinnus*.

mi W of Midway, June (CNCI) 1; Vernon, May (CNCI) 1; Pillar Lake, June (CNCI) 2; 2 mi S of Salmo, June (CNCI) 1; Creston, March, April, May (CNCI, MCZC, CUIC) 38; Midday Val., Merritt, June (INHS) 3. UNITED STATES: *Arizona:* Graham Co., Pinaleno Mts., Wet Canyon, 6,000–6,100 ft, July (CNCI) 9; Cochise Co., Chiric. Mts., Rustler Park, 8,400 ft, July (CNCI) 11; Graham Co., Pinaleno Mts., Post Crk., 9,000 ft, July (CNCI) 1; Graham Co., Pinaleno Mts., Turkey Flat, 7,200 ft, July (CNCI) 6; Apache Co., Chuska Mts., 2,250 m, Wagonwheel Campgrnd., July (CNCI) 2; Apache Co., Chuska Mts., 8,500 ft, August (MCZC) 2; Apache Nat'l. For., 2,700 m, Big Lake, 22 mi SW of Eagar, July (CNCI) 4; Coconino Co., San Francisco



Map 7. Distribution of *M. arizonicus.*

Mts., Snow Bowl, 2,800 m, July (CNCI) 1; Navajo Co., 2 mi W of Black Lake, Sitgreaves Nat'l. For., 2,240 m, July (CNCI) 26; Gila Co., Pinal Mts., Pioneer Pass, 1,660 m, July (CNCI) 1; Apache Nat'l. For., Escudilla Mt., 2,840 m, 9 mi NE of Alpine, July (CNCI) 1; Apache Nat'l. For., Escudilla Mt., 2,730 m, 8 mi NE of Alpine, July (CNCI) 1; Navajo Co., Sitgreaves Nat'l. For., Willow Springs Canyon, 2,160 m, July (CNCI) 1; Graham Co., Pinaleno Mts., 4 mi NW of Columbine, 8,800 ft, July (CNCI) 3; Cochise Co., Parker Canyon Lake, 5,500 ft, July (CNCI) 1; Graham Co., Pinaleno Mts., Grank Crk., 8,500 ft, July (CNCI) 5; Cochise Co., Carr Canyon, Huachuca Mts., 2,150 m, July (CNCI) 1; Cochise Co., Huachuca Mts., Miller Canyon, 5,500 ft, August (CNCI) 13; Cochise Co., 2 mi SW Portal, August (MCZC) 1; Cochise Co., nr. Portal, Chiricahua Mts., Rustler Park, 8,400 ft, July (FMNH) 1; Williams (FMNH, MCZC, USNM) 5; Graham Co., Wet Canyon, June (FMNH) 2; White Mts., Hannegans Meadow, May (FMNH) 2; Flagstaff (FMNH) 1; Graham Mts., May (FMNH) 1; St. Catalina Mts., 8,000 ft, May (FMNH) 1; Cochise Co., W Slope Chiric. Mts., Barfoot Peak, 8,250 ft, May (AMNH) 11; Cochise Co., Chiricahua Mts., Rustlers Park, 8,400 ft, May (AMNH) 1; Graham Co., Pinaleno Mts., Mile Post 127, 6,500 ft, May (AMNH) 22; Cochise Co., Ash Spring, Chiricahua Mts., May (AMNH) 4; St. Catalina Mts., 7,000 ft, 8,000 ft, April, May (AMNH) 3; Cochise Co., Chiricahua

Mts., Rustler Park, August (AMNH) 1; Cochise Co., Ramsey and Carr Canyons, Huachuca Mts., 6,500–7,000 ft, May (AMNH) 12; Cochise Co., Chiric. Mts., nr. Flys Peak, May (AMNH) 1; Cochise Co., 3 mi S of SWRS, Greenhouse Cny., Chiric. Mts., 5,500 ft, May (AMNH) 5; Flagstaff, San Francisco Mts., about 8,000 ft, August (AMNH) 1; Bear Wallow, Mt. Lemmon, May (CUIC) 6; Pima Co., Bear Wallow, Santa Catalina Mts., 8,200 ft, July (MSUC) 1; Cochise Co., Chiricahua Mts., Rustler Park, August (UCRC) 1; Marshall Gulch, St. Catalina Mts., August (URCI) 1; Chiric. Mts., May, June (USNM) 11; Flagstaff (CASC) 1; Santa Catalina Mts., 7,700 ft, August (CASC) 1; San Francisco Mts. (CASC) 2; state label only (USNM) 1. *Colorado:* Lime Creek, 9,500 ft, 6 mi S of Molas Pass, July (CNCI) 8; Durango, Missionary Ridge Road, 10,300 ft, July (CNCI) 1; Durango, March (USNM) 2; Ouray (AMNH, MCZC, USNM, CASC, FMNH) 45; Ouray, 7,500–8,000 ft, July (USNM) 1; above Ouray, Toll Road, 8,000–9,000 ft (USNM) 1; Denver, October (USNM) 2; Colorado Springs (USNM) 6; Waldo Canon, July (USNM) 1; state label only (MCZC) 10. "*Dakota*": state label only, Dac. (DEFW) 1. *Idaho:* Fremont Co., Warm River, August (JHFC) 2. *Nebraska:* state label only, Neb. (DEFW) 1. *New Mexico:* Lincoln Nat'l. For., 2 mi SE of Cloudcroft, 8,500 ft, July (CNCI) 98; Sandia Mts., 6,500 ft, Cibola Nat'l. For., Las Huertas Crk., July (CNCI) 1; Sandia Mts., 8,500 ft, Cibola Nat'l. For., Tree Spring Trail, July (CNCI) 14; Sandia Mts., Cibola Nat'l. For., Sandia Crest, 10,000–10,500 ft, July (CNCI) 49; Lincoln Nat'l. For., 1 mi SE of Cloudcroft, 8,750 ft, July (CNCI) 5; Cloudcroft, 8,500 ft, July (CNCI) 73; Coolidge (USNM, FMNH) 4; Iron Creek For. Camp, Black Range, August, September (FMNH) 2; Cloudcroft (USNM, MCZC) 8; Cloudcroft, June, August (USNM, MCZC) 4; Porvenir (CASC, MCZC) 42; Las Vegas HS, August (USNM, MCZC) 8; Beulah (MCZC) 1; Lincoln Co., Bonita Creek, 8 mi W of Angus, 7,700 ft, July (AFNC) 1; Jemez Mts., May, August, October (CASC) 4; state label only (FMNH) 1. *South Dakota:* Lawrence Co., Black Hills N.F., Roubaix Lk. Cpgd., 5,500 ft, July (MCZC) 1. *Utah:* Lonesome Beaver, 7,500 ft, Henry Mts., July (CNCI) 4; La Sal Mts., August, Grand Co., Poplar zone–8,500 ft (FMNH) 1; Iron Co., 5 mi SE of Cedar City, August (AMNH) 1; Park City, June (USNM) 1; Alta, June (USNM) 1; "Am. Fk. Can.," June (USNM) 1. *Washington:* Pierce Co., Mt. Rainier, N.P., 2 mi W Jct. Wash. 706 & Wash. 123, 2,600 ft, July (MCZC) 1.

Habitat. Specimens at hand have been taken from under the bark of logs, from leaf litter, from flood debris and wet moss, from soil along a stream, from fungus (*Fomitopsis pinicola, Fomes robineae*), and from a squirrel midden.

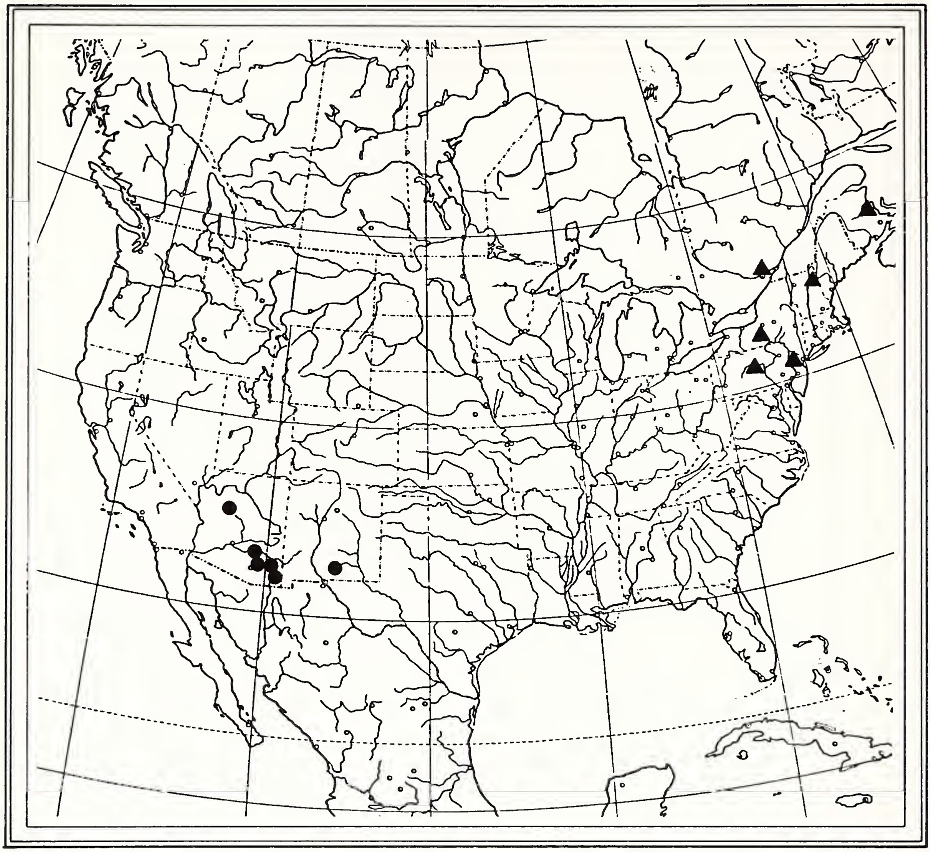
Myrmecocephalus gatineauensis, new species

Figs. 8, 55, 67, 88, 109; Map 8

Diagnosis. Adults of *M. gatineauensis* closely resemble those of *arizonicus* but are distinguishable by the presence of transverse microsculpture (Fig. 67) on the abdominal terga, and an allopatric northeastern distribution.

Description. Length 2.9–3.9 mm (N = 56; $\bar{x}$ = 3.28 mm). Color light to dark brownish-piceous; mouthparts, basal antennal segments and legs generally paler; apical abdominal segments sometimes darker, piceous. Habitus as in Figure 8.

Head (Fig. 8) moderate in size, flattened dorsally behind antennae, slightly longer than broad, broadly and evenly rounded at base. Surface densely and very finely



Map 8. Distribution of *M. gatineauensis* (triangles) and *M. pinalicus* (circles).

punctured and pubescent; surface between punctures smooth and shining. Eyes prominent, shorter than length of temples. Antenna relatively long, extending to apex of elytra. Prothorax (Fig. 8) elongate, cylindrical, strongly and evenly convex dorsally, broadest across anterior third; anterior angles broadly rounded; lateral margins strongly converging to base, slightly sinuate beyond middle; posterior margin narrowly reflexed. Disc deeply sulcate along median line, except extreme apex, sulcus ending in a deep, round, subbasal fovea. Surface densely and very finely punctured and pubescent; punctures coarser and slightly asperate towards sulcus; surface between punctures smooth and shining. Scutellum broadly carinate along median line at base only, carina not extending to apex; surface densely, coarsely punctured and pubescent. Elytra with surface moderately densely, coarsely, and uniformly punctured and pubescent; surface between punctures smooth and shining. Abdomen (Fig. 55) broad at base, narrower than elytra at base. Terga III and IV broadly and deeply impressed at base; tergum V shallowly impressed at base. Impression of tergum III coarsely punctured (Fig. 55); impressions of terga IV and V obsoletely punctured. Tergal surfaces rather densely and coarsely punctured and pubescent; surface between punctures with very fine microsculpture of minute, wavy, transverse microlines (Fig. 67).

Male. Eighth tergite with apical margin broadly truncate. Apical margin of eighth sternite broadly rounded. Median lobe of aedeagus as in Figure 88A. Paramere as in Figure 88B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 109.

Type material. Holotype, male, labeled: QUE: Gatineau Pk. near Mud Lake, 24.X.1967, A. Smetana/HOLOTYPE Myrmecocephalus gatineauensis n. sp., E. R. Hoebeke 1981. The type is in the Canadian National Collection, Ottawa.

Paratypes, 63, in the collections of the Canadian National Collection; American Museum of Natural History, New York, NY; Museum of Comparative Zoology, Harvard University, Cambridge, MA; Cornell University, Ithaca, NY; and California Academy of Sciences, San Francisco, CA.

Distribution. Myrmecocephalus gatineauensis occurs in northeastern North America, from New Brunswick and Quebec south to central Pennsylvania and northern New Jersey (Map 8). Specimens have been collected in May and from August through November.

Material examined. 64 specimens. CANADA: *New Brunswick:* Kouchibouguac Nat'l. Pk., September (CNCI) 4. *Quebec:* 4 mi W of Masham, nr. Mud Lake, August, October (CNCI) 21; Blind Lake, Gatineau Park, November (CNCI) 6; Fortune Lake, Gatineau Park, November (CNCI) 16; Gatineau Park, nr. Mud Lake, October (CNCI) 9; Gatineau Park, Hay Lake, October (CNCI) 4; 1 mi SW of Meach Lake, Gatineau Park, November (CNCI) 1. UNITED STATES: *New Hampshire:* Franconia (AMNH) 1. *New Jersey:* Phillipsburg, May (CASC) 1. *New York:* Tompkins Co., Snyder Heights, Ithaca, May (ERHC) 1. *Pennsylvania:* state label only (MCZC) 1.

Habitat. Adults of this species have been taken from a berlese sample of the nest lining of a deserted beaver lodge in Quebec, and from a blacklight trap in New York.

Etymology. Gatineauensis is an adjective derived from Gatineau N.C.C. Park, the place of origin for the majority of the specimens comprising the type series.

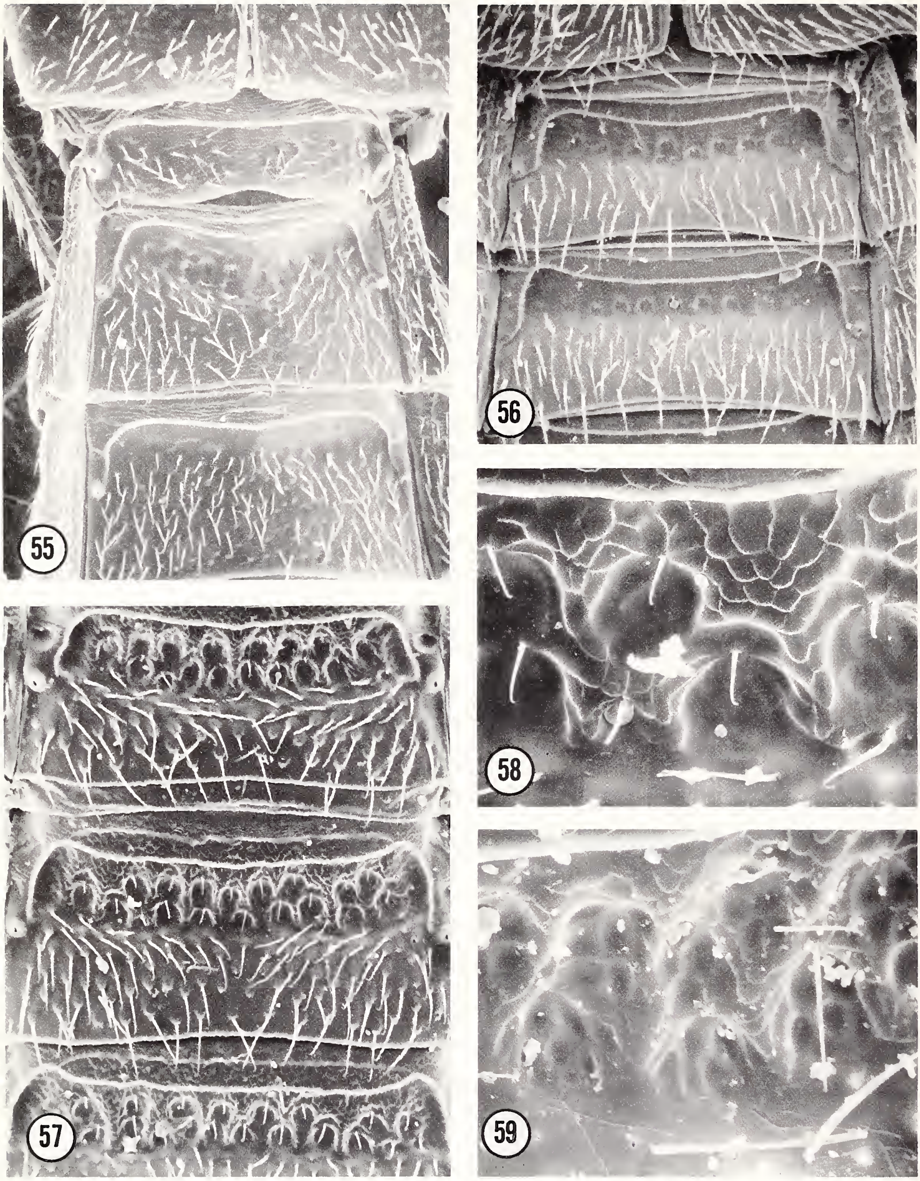
Myrmecocephalus caviceps (Casey)
Figs. 9, 68, 89, 110; Map 6

Lorinota caviceps Casey, 1906, p. 240 [type locality, New Mexico, Las Vegas].
Myrmecocephalus caviceps; Moore and Legner, 1975, p. 415.

Diagnosis. Adults of this species are very similar in appearance to those of *M. pinalicus* from which they are readily distinguished by the presence of fine transverse microsculpture on the elytral disc, similar to that found on the abdominal terga (Fig. 68).

Description. Length 2.9–3.4 mm ($N = 11$; $\bar{x} = 3.2$ mm). Color light to dark piceous-brown; mouthparts, basal antennal segments and legs paler. Habitus as in Figure 9.

Head (Fig. 9) moderate in size, slightly longer than broad, broadly arcuate-truncate at base. Surface moderately sparsely and minutely punctured and pubescent; surface between punctures smooth and shining. Eyes prominent, shorter than length of temples. Antenna moderate in length, rather stout, reaching to about middle of elytra. Prothorax (Fig. 9) elongate, evenly and strongly convex dorsally, broadest across



Figs. 55–59. Basal abdominal segments of North American Falagriini, dorsal aspect. 55. *Myrmecocephalus gatineauensis.* 56. *Falagria dissecta.* 57. *Aleodorus scutellaris.* 58–59. Close-up magnification of large foveae of basal abdominal impression of tergum III. 58. *Aleodorus scutellaris.* 59. *Aleodorus intricatus.*

anterior third; anterior angles broadly rounded; lateral margins strongly converging to base; posterior margin broadly arcuate, finely reflexed. Disc deeply sulcate along median line except at extreme apex, sulcus ending in a deep, rounded subbasal fovea. Surface sparsely and relatively minutely punctured and pubescent; surface between punctures smooth and shining. Scutellum finely carinate at base along median line; surface otherwise densely and coarsely punctured and pubescent. Elytra with surface moderately sparsely, finely and uniformly punctured and pubescent; surface between punctures with fine microsculpture consisting of minute transverse interconnecting microlines (similar to that in Fig. 68). Abdomen broad at base, narrower than elytra. Terga III–V transversely impressed at base; impression of tergum III with coarse and somewhat obsolete punctures; impressions of terga IV and V impunctate. Tergal surfaces relatively sparsely and finely punctured and pubescent; surface between punctures with fine microsculpture (Fig. 68), similar to that of elytra.

Male. Eighth tergite with apical margin broadly truncate, simple. Eighth sternite with apical margin broadly rounded. Median lobe of aedeagus as in Figure 89A. Paramere as in Figure 89B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 110.

Type material. Lectotype, here designated, with labels as follows: "N.M." [=Las Vegas, Mr. Herman Meeske]/CASEY bequest 1925/Type USNM 38911/"caviceps Csy."; my lectotype designation label is attached to it. In addition, two paralectotypes have labels identical to the lectotype, while one other is with labels: "Webb voir, Flagstaff, Ar.," All specimens are in the Casey collection of the U.S. National Museum (Natural History), Washington.

Distribution. Myrmecocephalus caviceps occurs at the high elevations of Arizona and New Mexico (7,600–8,500 ft) (Map 6). Adults have been collected from April to September, with most specimens taken in July and August.

Material examined. 12 specimens. UNITED STATES: *Arizona:* Cochise Co., Chiricahua Mts., Rustlers Park, April (AMNH) 2; Rustlers Park, 8,400 ft, July (CNCI) 1; Rustlers Park, 8,400 ft, July (FMNH) 1; Rustlers Park, August, 8,000 ft (FMNH) 1; Rustlers Park, 8,300 ft, September (FMNH) 1; nr. Portal, Onion Saddle, August (FMNH) 1; Chiricahua Mts., 8,500 ft, May (FMNH) 1; Williams, June (USNM) 1. *New Mexico:* Koehler (USNM) 1.

Habitat. Little is known about the habitat of this species. Specimens at hand have been collected from under bark of a dead ponderosa pine.

Myrmecocephalus pinalicus (Casey), **Revised Status**

Figs. 10, 40, 69, 90, 111; Map 8

Lorinota pinalica Casey, 1906, p. 241 [type locality, Arizona, Pinal Mts.].
As synonym of *caviceps*: Fenyes, 1912, p. 27; 1920, p. 158.
Myrmecocephalus pinalica; Moore and Legner, 1975, p. 415 (as synonym of *caviceps*).

Diagnosis. This species is extremely similar to *M. caviceps* from which it is distinguished by the complete absence of microsculpture on the elytral disc.

Description. Length 2.7–3.2 mm (N = 18; $\bar{x} = 2.95$ mm). Color light to very dark rufo-piceous; mouthparts, antennae and legs paler. Habitus as in Figure 10.

Head (Fig. 10) moderate in size, slightly longer than broad, broadly rounded at base. Surface very sparsely and finely punctured and pubescent (appearing nearly impunctate); surface between punctures smooth and shining. Eyes prominent, shorter than length of temples. Antenna moderately stout, reaching nearly to apex of elytra. Prothorax (Fig. 10) distinctly elongate, cylindrical, nearly as long as head, broadest across anterior third; anterior angles broadly and evenly rounded; lateral margins strongly converging to base; posterior margin finely but distinctly reflexed. Disc deeply sulcate along median line except at extreme apex, sulcus ending in a deep, round subbasal fovea. Surface sparsely and very finely punctured and pubescent; surface between punctures smooth and polished. Scutellum finely carinate basally; surface moderately densely and coarsely punctured and pubescent; extreme apex smooth and impunctate. Elytra with surface evenly, relatively sparsely and finely punctured and pubescent; surface between punctures smooth and polished. Abdomen broad at base, narrower than elytra. Tergum III broadly impressed at base; terga IV and V shallowly impressed basally. Impression of tergum III with coarse and somewhat dense punctures; impressions of terga IV and V impunctate or with few obsolete punctures. Tergal surfaces very sparsely and finely punctured and pubescent; surface between punctures with sparse and fine transverse microsculpture (Fig. 69).

Male. Eighth tergite with apical margin truncate, simple. Apical margin of eighth sternite broadly, evenly rounded. Median lobe of aedeagus as in Figure 90A. Paramere as in Figure 90B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 111.

Type material. Holotype, with labels as follows: "Pinal Mts., Arizona, Wickham"/ CASEY bequest 1925/Type USNM 38910/"Lorinota pinalica Csy." The specimen is in the Casey collection of the U.S. National Museum (Natural History), Washington.

Distribution. Myrmecocephalus pinalicus is known from the high elevations of Arizona and New Mexico (Map 8). Adults have been collected from May through August.

Material examined. 22 specimens. UNITED STATES. *Arizona:* Graham Co., Pinaleno Mts., Turkey Flat, 7,200 ft, July (CNCI) 1; Cochise Co., Rucker Dam, Chiricahua Mts., August (UCRC) 1; Pima Co., Santa Catalina Mts., Catalina Hwy., 7,000 ft, May (AMNH) 8; St. Catalina Mts., 8,000 ft, May (AMNH) 1; Chiricahua Mts., June (USNM) 1; Williams (FMNH) 1; Cochise Co., 3 mi S of SWRS, Greenhouse Cyn., Chiricahua Mts., 5,500 ft, May (AMNH) 1; state label only (MCZC, FMNH, USNM) 7. *New Mexico:* Cloudcroft, May (FMNH) 1.

Habitat. Some specimens at hand have been taken from under bark of a ponderosa pine log.

4. *Falagria* Leach

Falagria Leach, 1819, p. 177; Curtis, 1829, p. 33; 1833, pl. 462; Mannerheim, 1831, p. 500; Stephens, 1832, p. 103; Dejean, 1833, p. 74; 1837, p. 83; Erichson, 1839, p. 293; 1840, p. 48; Redtenbacher, 1849, p. 650; Melsheimer, 1853, p. 153; Lacordaire, 1854, p. 28; Jacquelin du Val, 1857, p. 4; Kraatz, 1856, p. 32; Redtenbacher, 1858, p. 118; Thomson, 1859, p. 34; 1860, p. 297; LeConte, 1863, p. 22;

Gemminger and Harold, 1868, p. 502; Crotch, 1873, p. 28; Redtenbacher, 1874, p. 129; Mulsant and Rey, 1875, p. 433; LeConte and Horn, 1883, p. 91; Henshaw, 1885, p. 31; Fowler, 1888, p. 147; Ganglbauer, 1895, p. 253; Everts, 1898, p. 231; 1903, p. 231; Casey, 1906, pp. 227, 245; Reitter, 1909, pp. 41, 74; Blatchley, 1910, pp. 345, 346; Fenyes, 1912, p. 20; Johansen, 1914, pp. 237, 238; Fenyes, 1918, p. 18; 1920, p. 152; Cameron, 1920, pp. 361, 392; Leng, 1920, p. 124; Notman, 1920, p. 731; Everts, 1922, p. 103; Bernhauer and Scheerpeltz, 1926, p. 574; Porta, 1926, p. 150; Portevin, 1929, pp. 253, 293; Scheerpeltz, 1929, p. 9; 1930, p. 73; Bradley, 1930, p. 85; Joy, 1932, pp. 16, 39, 41; Rapp, 1933, p. 402; Scheerpeltz, 1934, p. 1572; Cameron, 1939, pp. 233, 242; Blackwelder, 1943, p. 547; 1944, p. 158; Tottenham, 1949, p. 387; Horion, 1951, p. 169; Blackwelder, 1952, p. 164; Hansen, 1954, p. 96; Tottenham, 1957, pp. 89, 90; Scheerpeltz, 1958, p. 35; Horion, 1967, p. 202; Arnett, 1968, p. 289; Palm, 1968, pp. 71, 77; Scheerpeltz, 1974, pp. 51, 222; Lohse, 1974, pp. 65, 66; Moore and Legner, 1975, p. 414; Seevers, 1978, p. 144; Last, 1979, p. 233.

Variant spellings: *Falagrea* Eichelbaum, 1915, p. 116; *Flagria* Pearse, 1946, p. 139.

Type-species: Staphylinus sulcatus Paykull, fixed by original designation.

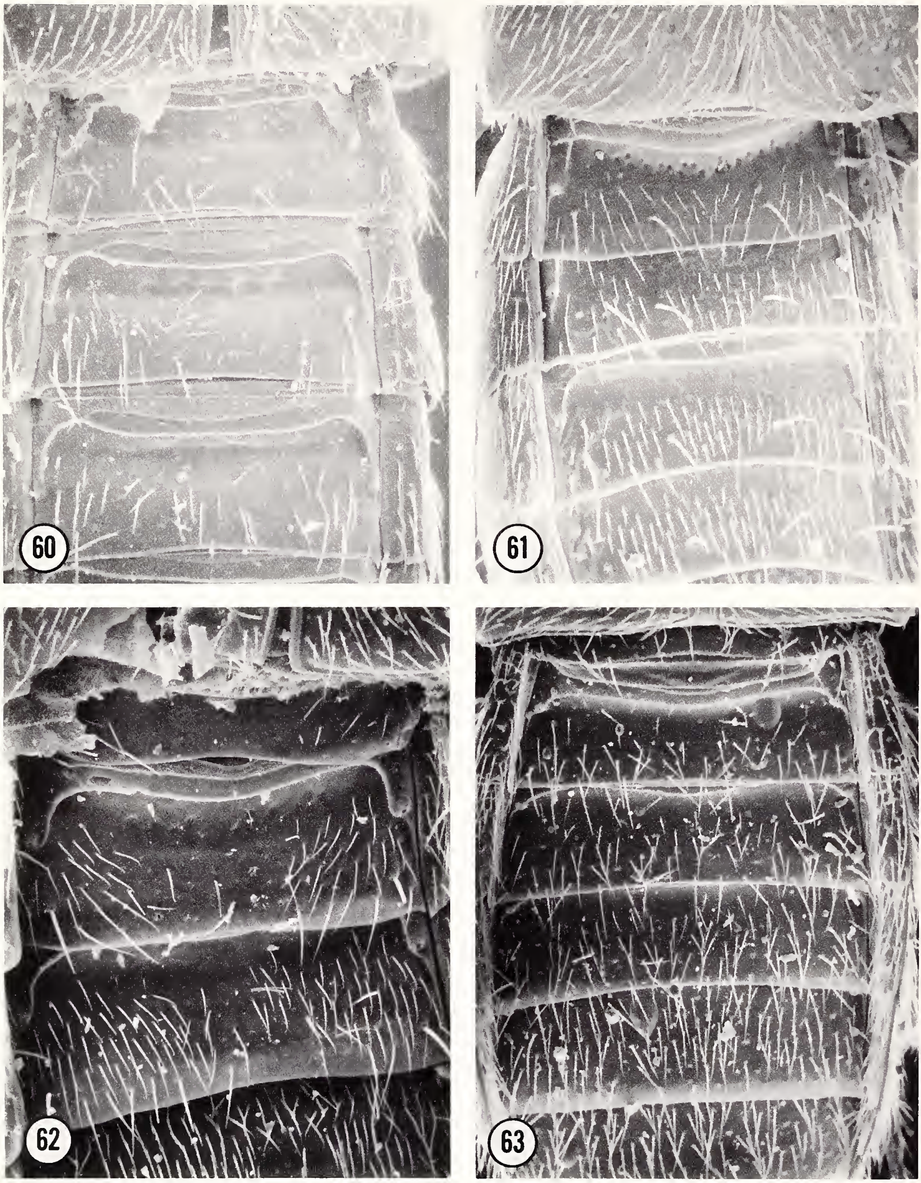
Coenobiotes Gistel, 1856, p. 387; Blackwelder, 1952, p. 102.

Type-species: Staphylinus sulcatus Paykull, fixed by subsequent designation (Blackwelder, 1952, p. 102).

Biology: Heeger, 1857, pp. 315–317; Ganglbauer, 1895, p. 254; Xambeu, 1910, p. 20; Szekessy, 1950, p. 499; Benick, 1952, p. 89.

Diagnosis. Adults of this genus are distinguished from those of other genera of the Falagriini by the bicarinate scutellum (Figs. 35, 44), comb of minute denticles on the apical margin of tergum VIII, delimited hypomera, deep pronotal sulcus, and uniform elytral punctation.

Description. Head moderate in size, about as broad as prothorax, arcuate-truncate at base, hind angles rounded. Neck narrow, about ¼ to ⅕ as wide as head across eyes. Eyes small, slightly prominent. Labrum (Fig. 26A) moderately large, transverse. Mandibles (Fig. 26D, E) robust; right mandible with small tooth at middle of inner margin; left mandible simple. Maxilla (Fig. 26C) with galea pubescent on membranous apex; lacinia curved towards hooked apex, with rather long, curved spines on apical half of inner margin, finely setose below spines. Maxillary palpus (Fig. 26C) moderately elongate; segment 3 longer than 2, incrassate towards apex; segment 4 narrow, subuliform, at least ⅓ as long as 3. Mentum transverse, broadly emarginate on front margin. Ligula (Fig. 26B) small, narrow, distinctly split to about middle; lobes rounded at apex. Labial palpus (Fig. 26B) moderate in length; segment 2 slightly narrower and much shorter than 1; segment 3 longer and narrower than 2, distinctly dilated towards truncated apex. Antenna moderately long, slightly widened towards apex; segments 1–3 rather elongate; segment 3 as long as or shorter than 2; segments 4–10 each more transverse than preceding segment; segment 11 rather large, obtusely pointed, not as long as 9 and 10 combined. Prothorax cordiform, broadest at anterior third, strongly narrowed and converging towards base, deeply sulcate along median line, with fine, transverse and impressed line before base. Prosternum moderately short before procoxae, posterior margin with obtuse-angular process. Mesospiracular



Figs. 60–63. Basal abdominal segments of North American Falagriini, dorsal aspect. 60. *Aleodorus partitus.* 61. *Lissagria laeviuscula.* 62. *L. laticeps.* 63. *Borboropora quadriceps.*

peritremes large, quadrate, and contiguous along median line. Mesosternal process extending to about middle of mesocoxae, obtusely rounded or narrowly truncate at apex. Metasternal process obtuse, separated from mesosternal process by short isthmus in most specimens. Mesocoxae moderately separated. Hypomera delimited from pronotal disc by marginal ridge. Scutellum strongly bicarinate (Fig. 44). Elytra convex, only feebly or indistinctly sinuate at outer angles; surface minutely and uniformly punctured and pubescent, without microsculpture. Abdomen narrower than elytra at base, rather parallel or somewhat dilated at middle. Terga III–V transversely impressed at base; impressions coarsely punctate. Apical margin of tergum VIII with arcuate comb of very minute denticles.

The genus *Falagria* is widely distributed throughout the world, with the majority of species known from the north temperate regions. Two species occur in America north of Mexico.

KEY TO SPECIES OF *Falagria*

1. Pronotal sulcus narrow, moderately deep, interrupted near middle by a small pocket-like depression in most specimens, though sometimes indistinct in some (Fig. 35); margins and venter of abdomen towards apex without long, erect setae; spermatheca as in Figure 112 .... *dissecta* Erichson
– Pronotal sulcus narrow and deep, not interrupted near middle by pocket-like depression; margins and venter of abdomen towards apex with long, erect setae; spermatheca as in Figure 113 .... *sulcata* (Paykull)

Falagria dissecta Erichson
Figs. 11, 26, 35, 44, 47, 56, 91, 112; Map 9

Falagria dissecta Erichson, 1840, p. 49 [type locality, Pennsylvania].
Falagria erythroptera Melsheimer, 1846, p. 30 [type locality, Pennsylvania].
Falagria globosa Melsheimer, 1846, p. 30 [type locality, Pennsylvania].
Falagria iowana Casey, 1906, p. 247 [type locality, Iowa, Cedar Rapids].
Falagria ithacana Casey, 1906, p. 247 [type locality, New York, Ithaca].
Falagria subsimilis Casey, 1906, p. 248 [type locality, Colorado, Cañon City].
Falagria texana Casey, 1906, p. 248 [type locality, Texas, Austin, on the Colorado River above Columbia].
Falagria angulata Casey, 1906, p. 249 [type locality, Utah, St. George].
Falagria sterilis Casey, 1911, p. 178 [type locality, southwestern Utah].

Diagnosis. Falagria dissecta can be easily confused with the introduced species *sulcata* in external appearance, but can be distinguished by the deep pronotal sulcus which is usually interrupted near the middle by a small depression (Fig. 35), absence of long, erect setae on the margins and venter of abdomen near the apex, and the characteristic spermatheca (Fig. 112).

Description. Length 1.9–2.6 mm (N = 142, $\bar{x} = 2.17$ mm). Color pale piceo-testaceous to black or piceous-black; mouthparts, basal antennal segments, in some specimens the elytra, and legs generally paler. Habitus as in Figure 11.

Head (Fig. 11) moderate, slightly broader than long, convex, basal angles broadly rounded, broadly arcuate-truncate at base. Surface minutely, sparsely punctured and pubescent; surface between punctures smooth and shining. Eyes equal to length of temples. Antenna moderately long and slender, reaching middle of elytra. Prothorax (Figs. 11, 35) distinctly wider than head, broadest across anterior third, strongly converging to base. Disc moderately deeply sulcate along median line except extreme apex, ending in broad, deep, rounded fovea; with small pocket-like depression interrupting sulcus near middle in most specimens (Fig. 35). Surface sparsely, finely punctured and pubescent, punctures tending to be slightly asperate; surface between punctures smooth and shining. Scutellum (Figs. 35, 44) bicarinate, consisting of two prominent, longitudinal carinae entire to apex, carinae enclosing a smooth, impressed channel. Elytra (Fig. 47) with surface densely, minutely and uniformly punctured and pubescent; punctures varying from fine to asperate among populations; surface between punctures smooth and shining. Abdomen (Fig. 56) broad at base, nearly as broad as elytra. Terga III–V broadly and transversely impressed at base; impressions with numerous, coarse, but sometimes shallow punctures. Tergal surfaces moderately densely, finely punctured and pubescent; in most specimens abdominal margins and venter at apex without long, erect setae; surface between punctures smooth and shining.

Male. Eighth tergite with apical margin slightly arcuate at middle, with comb of minute denticles. Eighth sternite with apical margin broadly, evenly rounded. Median lobe of aedeagus as in Figure 91A. Paramere as in Figure 91B.

Female. Apical margin of eighth tergite and sternite as in the male. Spermatheca as in Figure 112.

Type material. Falagria dissecta Erichson. Lectotype, here designated, with labels as follows: "Pennsylv., Zimm., Hist. Coll. Nr. 5283"/Typus/Zool. Mus. Berlin; my lectotype designation label is attached to it. Three paralectotypes have labels identical to the lectotype. One additional paralectotype has the labels: "5283"/Typus/"dissecta Er., Pennsylv. Zimm."/Zool. Mus. Berlin. All specimens are in the Erichson collection of the Institut für Spezielle Zoologie und Zoologisches Museum, Humboldt-Universität, Berlin.

Falagria erythroptera Melsheimer. Holotype, with labels as follows: pink disc [=Middle States]/"Falagria erythroptera, dissecta Mels." The specimen is in the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

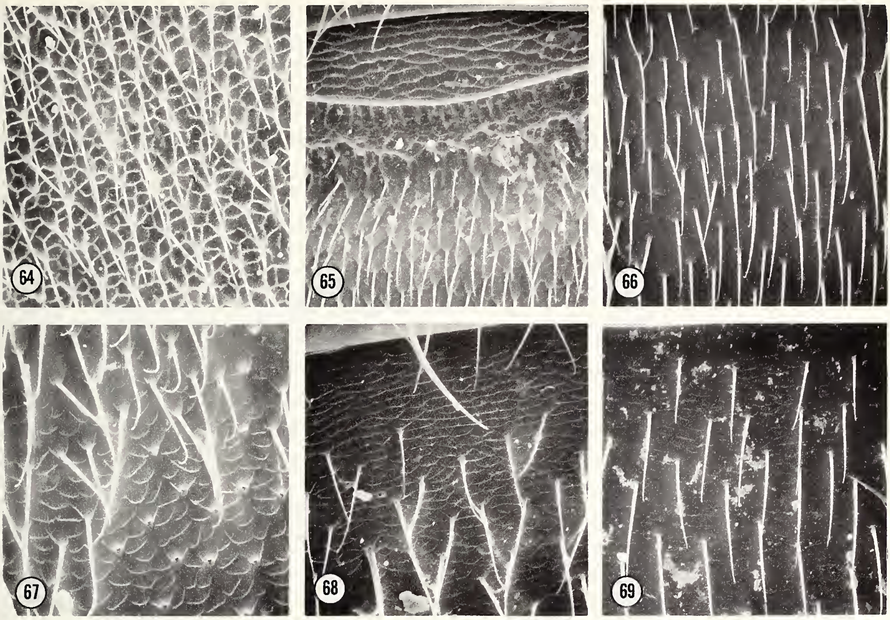
Falagria globosa Melsheimer. The holotype could not be located.

Falagria iowana Casey. Lectotype, here designated, with the following labels: "Ia."/CASEY bequest 1925/Type USNM 38920/"iowana Csy."; my lectotype designation label is attached to it. In addition two paralectotypes have label data identical to that of the lectotype.

Falagria ithacana Casey. Holotype, with labels: "N.Y." [=Ithaca (Valley). Mr. H. H. Smith]/CASEY bequest 1925/Type USNM 38921/"ithacana Csy."

Falagria subsimilis Casey. Lectotype, here designated, with the labels: "Canon City, Colorado, Wickham"/CASEY bequest 1925/Type USNM 38922/"subsimilis Csy."; my lectotype designation label is attached to it. One paralectotype has the same data as the lectotype, while another has the labels: "N.M." [=Gallup, Mr. H. F. Wickham].

Falagria texana Casey. Lectotype, here designated, with the following labels: "Tex" [=Austin on the Colorado River above Columbia]/CASEY bequest 1925/Type USNM



Figs. 64–69. Integument of various body regions of North American Falagriini. 64. *Myrmecocephalus sculpturatus,* elytron. 65. *M. sculpturatus,* abd. segment IV. 66. *M. arizonicus,* abd. segment III. 67. *M. gatineauensis,* abd. segment VI. 68. *M. caviceps,* abd. segment VI. 69. *M. pinalicus,* abd. segment VI.

38923/"texana Csy."; my lectotype designation label is attached to it. Three paralectotypes have labels identical to the lectotype.

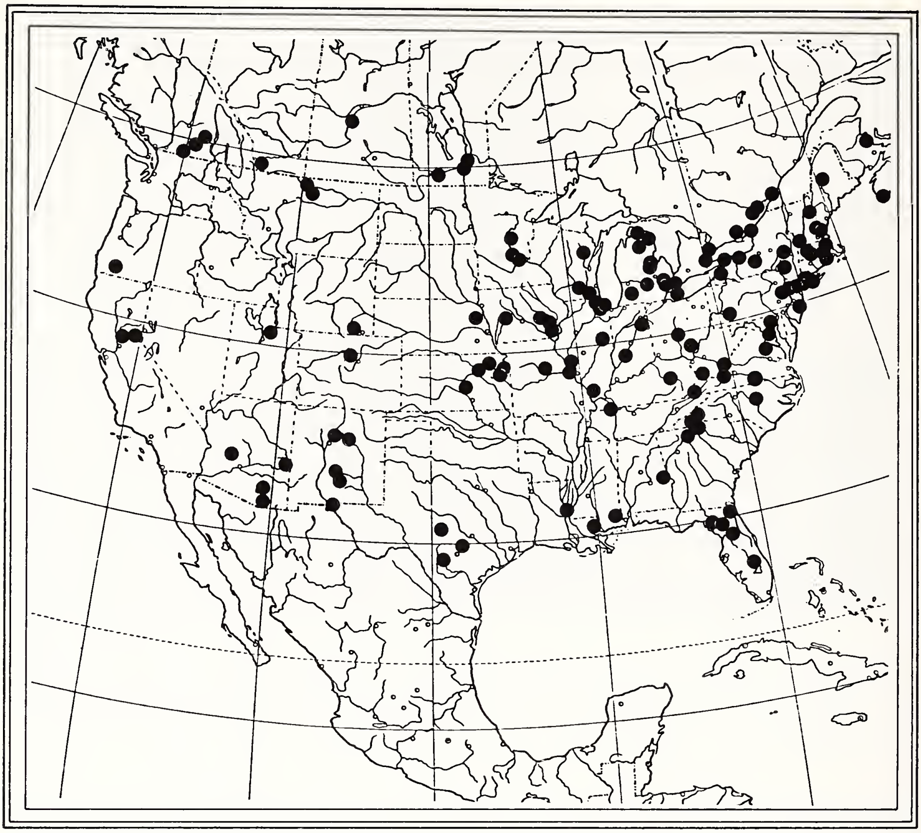
Falagria angulata Casey. Lectotype, here designated, with labels: "St. George, Utah, July, Wickham"/CASEY bequest 1925/Type USNM 38924/"angulata Csy."; my lectotype designation label is attached to it. In addition, three paralectotypes have labels identical to the lectotype.

Falagria sterilis Casey. Holotype, with labels as follows: "Ut."/CASEY bequest 1925/Type USNM 38925/"sterilis Csy."

Type specimens of the above six species are in the Casey collection of the U.S. National Museum (Natural History), Washington.

Distribution. In America north of Mexico, *Falagria dissecta* is one of the most common species of the tribe and is transcontinental in distribution (Map 9). Specimens have been collected from January through December, with most collections made from April through September.

Material examined. 1,820 specimens. CANADA: *Alberta:* Highwood Pass, 7,600 ft, August (CNCI) 1; Turin, July (CNCI) 1; 16 mi S of Pincher Creek, August (CNCI) 1. *British Columbia:* Vernon, April (CNCI) 1; Summerland, December (CNCI) 1; McIntyre Rd., Oliver, 3,000 ft, May, June (CNCI) 3. *Manitoba:* Ninette, May (CNCI) 5; Pelican Lake, Ninette, May (CNCI) 5; Stonewall, April, August (CNCI) 18; Aweme

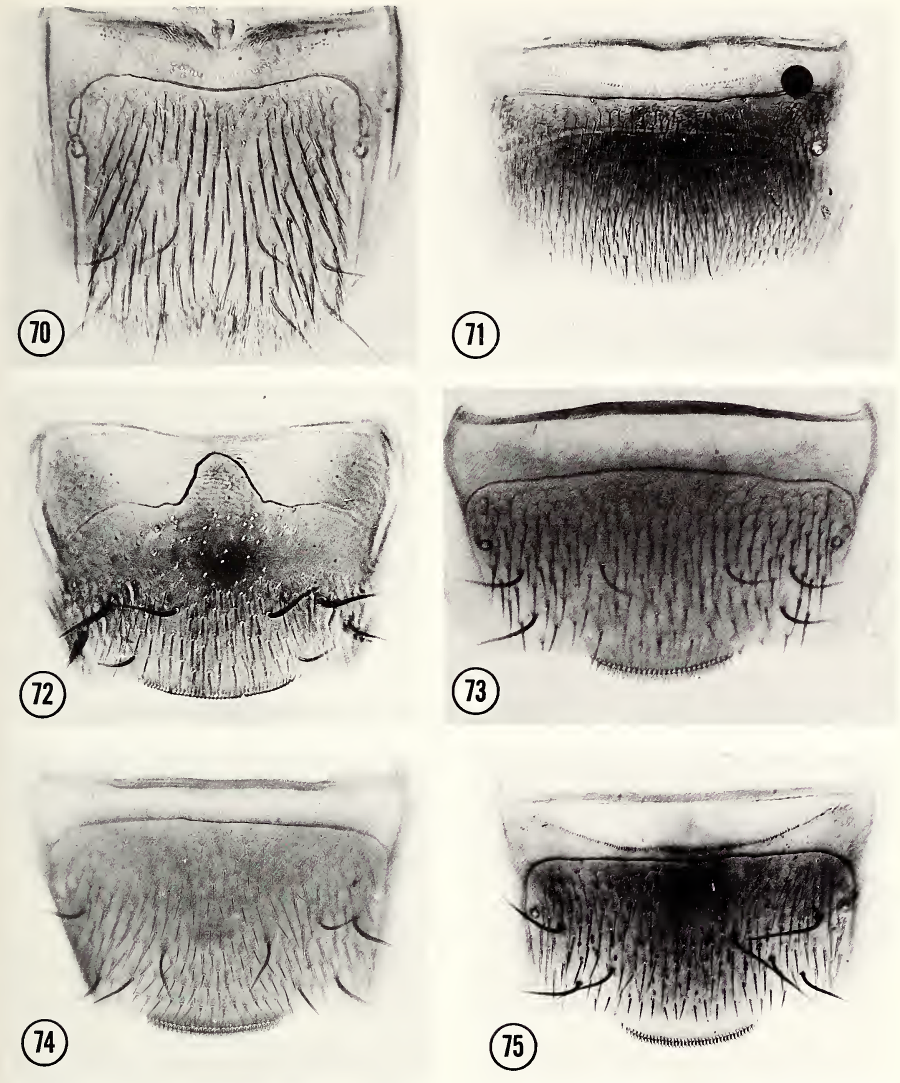


Map 9. Distribution of *Falagria dissecta.*

(USNM) 3; Spruce Woods Prov. Park, Assinibone River, June (CNCI) 1; Glenlea, 10 mi S of Winnipeg, May–June (CNCI) 2; Winnipeg, May (CNCI) 3; Bird's Hill, May (CNCI) 1; 2 mi W of Stockton, May (CNCI) 3; Manon (FMNH) 2. *New Brunswick:* Kouchibouguac N.P., June, September (CNCI) 34. *Nova Scotia:* West Light, Sable Isl., June (CNCI) 1; West end of Sable Isl., July (CNCI) 8; Sable Isl., September (CNCU) 1. *Ontario:* Ontario, June, July, August, September (CNCI) 11; Kanata, Ottawa, April (CNCI) 2; Mer Bleue, Ottawa, August–September, June–July, July–August (CNCI) 9; Marmora, June, July, August (CNCI) 11; 5 mi NW of South March, May (CNCI) 1; Pt. Pelee, June (CNCI) 1; Pelee Island, Lake Erie, August (USNM) 1; Toronto, May (CUIC) 1; Osgoode, October (CNCI) 12; Pr. Edw. Co., March, August, November (CNCI) 8; Constance Bay (CNCI) 1; Kent Co., Tilbury, May (FMNH) 2; Richmond, September (CNCI) 1; St. Lawrence Isl. Nat'l. Park, Thwartway Island, September (CNCI) 1; St. Lawrence Nat'l. Park, Grenadier Isl. W. (CNCI) 1; Ottawa, Golf Club, November (CNCI) 1. *Quebec:* Montreal, April, May, August, September, October (CUIC, MSUC, CNCI, FMNH, ZMB) 20; Montreal Isl. (FMNH) 1; 4 mi W of Masham, nr. Mud Lake, October (CNCI) 2; Knowlton, June, July

(CNCI, DENH) 2; Lac Phillipe, September (CNCI) 2; Kazabazua, August (CNCI) 1; 1 mi SW of Mont Tremblant, June (CNCI) 16; Hudson Heights, July, August, September (CNCI) 11; Mont Albert, Parc Gaspesie, July (CNCI) 1; Venise P.O., September (CNCI) 1; Bagotville, September (CNCI) 2. *Saskatchewan:* Saskatoon, May, September (CNCI) 3; Dundurn, May (CNCI) 1. UNITED STATES: *Alabama:* Auburn, March (CNCI); Opelika, March (CNCI) 4. *Arizona:* S. Rita Mts., May (USNM) 5; St. Rita Mts., Madera Cyn., August (FMNH) 1; St. Catalina Mts., Sabino Canyon, 3,000 ft, November (USNM) 1; Maricopa Co., Wickenburg, August (FMNH) 1; St. Cruz Co., Patagonia, November (FMNH) 1; Tucson, April, May (USNM) 5; Apache Nat'l. Forest, Escudilla Mt., 2,730 m, 8 mi NE of Alpine, July (CNCI) 1; Pima Co., Pantano, November (FMNH) 1. *California:* Placer Co., Lake Tahoe, Homewood, 6,200 ft, August (CNCI) 3; Yuba Co., Brown's Valley, May (UCRC) 32. *Colorado:* Kenoshe Pass, 10,000 ft, July (CASC) 1; Boulder, May (AMNH) 25. *Connecticut:* Stamford, August (FMNH) 2; state label only (USNM) 1. *District of Columbia:* Washington, March, April, July (USNM) 8. *Florida:* Okeechobee, July (FMNH) 6; Jacksonville, March (FMNH) 2; Marion Co., Lake Eaton, April (JHFC) 1; Alachua Co., San Felasco Hammock, March (JHFC) 2; Suwannee Co., 7 mi SE Branford, Santa Fe River, May (DENH) 1. *Georgia:* 5 mi W of Toccoa, September (CNCI) 5; Glynn Co., St. Simons Isl., August (JHFC) 1. *Illinois:* Urbana, Champaign, Co., June, July, August (INHS) 244; Urbana, October (INHS) 4; Urbana, July (FMNH) 1; Urbana, April (FMNH) 1; Algonquin, April, May, June (INHS, MCZC, FMNH) 16; Champaign, October (INHS) 1; Pine Hills Field Sta., Union Co., May (CNCI) 2; Cook Co., Homewood, September, October (FMNH) 172; Cook Co., Chicago, July (FMNH) 13; Cook Co., Hazelwood, September (FMNH) 10; Joliet, April (FMNH) 1; Thiedville, May, July (FMNH) 2; Chicago, April (FMNH) 1; Palos Park, May (FMNH) 1; Bowmanville, October (FMNH) 2; Glendon Park, April (FMNH) 1; Jersey Co., 1 mi W of Fieldon, April (FMNH) 4; Raccoon Grove, 2 mi S of Monee, Will Co., October (FMNH) 2; Charleston, October (INHS) 3; state label only (INHS, MSUC, WSUI) 4. *Indiana:* Bloomington, October (INHS) 13; Wells Co., 2 mi W of Bluffton, August (UCRC) 1; Tremont, June (FMNH) 1; Mineral Springs, September (FMNH) 1. *Iowa:* Iowa City (CUIC, FMNH) 4; Mt. Pleasant, March (AMNH) 2; Guthrie Center, December (LACM) 1; state label only (CUIC, FMNH) 2. *Kansas:* Lawrence, March, July, August, September, November (INHS, AMNH) 108; Manhattan, November (INHS) 3: Onaga, July (MCZC) 1; McPherson, June (MCZC) 1; Leavenworth, July (AMNH) 1; Topeka, September (FMNH) 1; Douglas Co., June (AMNH) 1; state label only (MSUC) 1. *Kentucky:* Slade, August (CNCI) 1. *Louisiana:* Concordia Co., 5 mi W of Ferriday, May (CNCI) 1; Covington, June (FMNH) 1. *Maine:* Augusta, September (DENH) 1; Kineo, June (MCZC) 1; E. Machias, June (ZMB) 1. *Maryland:* Sparrow Point, July (CASC) 1; Baltimore, July (CASC) 6; Jackson's Isl., June (USNM) 12; Mt. Lake Park, July 2,500 ft (MCZC) 2; Montgomery Co. (AMNH) 1. *Massachusetts:* S. Framingham (CNCI, FMNH, ZMB) 7; Framingham, August (CUIC) 2; Framingham, July (MCZC) 1; Framingham, August, November (MCZC, FMNH) 4; Marion (MCZC) 1; Lowell (MCZC) 2; Cambridge, January (MSUC, MCZC) 9; Wayland, October (UCSE) 3; Berlin, June (UCSE) 2; Northampton, June, August, September, October (CNCI) 8; Mer'ck River, Tyngsboro, April (MCZC) 4; Sherborn, April, November (MCZC) 2; Natick, March (MCZC) 1; Attleboro, September (MCZC) 1; Boston (MCZC) 1; Dighton, April (MCZC) 1;

Springfield, August (MCZC, USNM) 3; Lynn, July (MCZC) 2; Tatham, August (USNM) 2; Hopkinton, August (USNM) 1; Stoneham, February, March (FMNH) 3; Berkeley (FMNH) 1; Bristol Co. (FMNH) 1; Somerset, September (FMNH) 3; Fall River (FMNH) 4; state label only (FMNH, MCZC) 15. *Michigan:* Detroit, August (MSUC, USNM) 7; Alpena (INHS) 1; Alpena Co., June (MSUC) 2; Cheboygan Co., July (INHS) 9; Crawford Co., May (MSUC) 6; Oakland Co., April (MSUC, AMNH) 4; Midland Co., May (MSUC) 13; Bay Co., April, May (MSUC) 4; Wayne Co., May (MSUC) 1; Kalamazoo Co., May (MSUC) 1; Saginaw Co., September (MSUC) 1; Rose Lake Wildlife Expt. Sta., Clinton Co., April (ERHC) 2; Galesburg (MCZC, SEMC) 13; Williamston, Ingham Co., July (FMNH) 4; state label only (USNM, MSUC, DEFW) 6. *Minnesota:* Brainerd, June (CNCI) 2; Minneapolis, June, August (CNCI) 4; Elk River, August (CNCI) 6; state label only (USNM, FMNH) 9. *Missouri:* Columbia, June (CNCI) 1; state label only (USNM, FMNH, ZMB) 5; St. Louis (FMNH, ZMB) 5. *Mississippi:* Lucedale, December (CUIC) 1. *Montana:* Assinibone (USNM) 11; Bear Paw Mt., August, September (USNM) 2. *Nebraska:* West Pt., May (USNM); state label only (DEFW) 1. *New Hampshire:* Barnstead, September (CASC, CNCI) 20; W. Milton (CUIC) 1; Mt. Washington (MCZC, AMNH) 6; Mt. Washington summit, August, September (MCZC, AMNH) 4; Mt. Washington, 5–6,000 ft, July (MCZC); Farmington, August (MCZC) 3; Exeter, October (MCZC) 1; Dover, August (MCZC) 1; Three Mile Isl., June (MCZC) 3; Franconia (AMNH) 2; Strafford Co., 1 mi SW Durham, May (DENH) 4; Rockingham Co., Odiornes Pt. St. Pk., May (DENH) 1. *New Jersey:* Hampton, April, July (DENH) 2; Hopkinton, September (DENH) 1; Philipsburg, May, June, August (CASC) 5; Rahway (AMNH) 35; Avenel, May, June, August (AMNH, FMNH) 27; Snake Hill, September (AMNH) 2; Berkeley Heights, May (AMNH) 9; Fort Lee District (AMNH) 1; Westwood, July (AMNH) 1; Island Beach, Barnegal Bay (AMNH) 1; Hopatcong (AMNH) 1; Chester, July (AMNH) 12; Roselle Park, April (AMNH) 1; Monmouth Co., Sandy Hook, August (JHFC) 1; state label only (AMNH, FMNH) 8; Ocean Co., 3 mi S Tuckerton, June (DENH) 11. *New Mexico:* Sandoval Co., 15 mi NE of San Ysidro, July (CNCI) 1; Iron Creek Forest Camp, Black Range, August (FMNH) 4; Las Vegas HS, August (USNM, MCZC) 6; Las Vegas, February, April (MCZC) 2; Pecos, July (MCZC) 1; Beulah, May (MCZC) 1; Lincoln Nat'l. For., 132 mi S of Cloudcroft, 7,500 ft, July (CNCI) 1; Lincoln Co., Sierra Blanca Ski Area, 10,600 ft, July (CNCI) 1; state label only (USNM) 1. *New York:* Ithaca, August, September, October (CASC, CUIC, USNM) 15; Port Ontario, July (CASC) 1; Green Co., July (ICCM) 1; Long Island (USNM) 1; Olcott, February, April, November (CUIC) 16; Catskill Mts. (CUIC) 3; Tompkins Co., Town of Ulysses, N of Jacksonville, September (ERHC) 1; Ithaca, Tompkins Co., 1,000 ft, April (JERC) 2; Tompkins Co., Town of Caroline, April (ERHC) 1; Ithaca, Tompkins Co., September (ERHC) 1; Altamont, April (CUIC) 1; Mosholu (AMNH) 1; Ulster Co., August (AMNH) 1; Rochester, May, October, September, November (AMNH) 13; Brooklyn, November (JCCM, USNM) 6; Westchester Co. (FMNH) 2; Chataugua Co., Lake shore, Sheridan, February (CNCI) 1; Chataugua Co., April (CNCI) 2; Bronx Park, NYC (AMNH) 1; West Farms (AMNH) 1; Lake Shore, Rt. 5, April (CNCI) 1; state label only (AMNH, USNM, FMNH, INHS, MCZC) 17. *North Carolina:* Black Mt., July (CASC) 1; Glen Falls Area, 3 mi SW of Highlands, 3,200 ft, September (CNCI) 1; Clayton, May (NCSU) 1. *Ohio:* Athens, August (CNCI) 5; Columbus, July (AMNH) 1. *Oregon:* Jackson Co., 19 mi



Figs. 70–75. Abdominal tergum VIII of North American Falagriini. 70. *Cordalia obscura.* 71. *Myrmecocephalus sculpturatus.* 72. *Leptagria perexilis.* 73. *Falagrioma socorroensis.* 74. *Aleodorus bilobatus.* 75. *Lissagria laeviuscula.*

SE of Eagle Point, August (AMNH) 1. *Pennsylvania:* Easton, March, April, May, July, August, September (CASC, CNCI) 7; Pittsburgh, August (ICCM); Crisp, July (ICCM) 1; Pocono Lake, July (CASC) 1; Jeannette, July, September, October, November (CNCI, MCZC, AMNH, FMNH) 25; Chestnut Hill, June, July, August (MCZC) 2; Camp Colony, August (FMNH) 2; state label only (MCZC) 33. *Rhode*

Island: Barrington (MCZC) 1; state label only (MCZC, USNM) 4. *South Carolina:* Clemson, April (CNCI) 3. *Tennessee:* Ky. Lake, nr. Model, August (CNCI) 1; Sevier Co., Great Smoky Mts. Natl. Pk., 2 mi N Maddron Bald, September (CUIC) 2. *Texas:* Uvalde, April (USNM) 3; N. Braunfels, June (MCZC) 1; El Paso, November (MCZC) 3; Luling (MCZC) 1; Texas Junction, February (FMNH) 1; Cypress Mills, May (FMNH) 2; state label only (MCZC, USNM, FMNH) 3. *Utah:* Park City, June (USNM) 1; St. George, July (USNM, MCZC) 2. *Vermont:* Manchester, July (CASC) 1; Westmore, August (CNCI) 5; Bennington Co., Dorset, July (MCZC) 3; Bennington Co. (CNCI, FMNH) 2; state label only (USNM, CNCI, AMNH, FMNH) 59. *Virginia:* Stone Cr., Lee Co. (USNM) 3; Mountain Lake Biol. Stat., 2 mi N of Mountain Lake, 4,000 ft, September (CNCI) 2; Fredricksburg, July (USNM) 1; mouth of Difficult Run, August (USNM) 1; Accomack Co., Chincoteague, August (JHFC) 1. *West Virginia:* Justice, July (CUIC) 1; White Sulphur, July, August (MCZC, FMNH, ZMB) 4. *Wisconsin:* Clintonville, April, June (WSUC) 52; Madison, April, May, October (WSUC) 10; Delavan, August (FMNH) 1; state label only (CASC, FMNH) 4. *Wyoming:* Laramie (USNM) 1.

Habitat. Adults of this species are known to occur in a variety of habitats. Specimens at hand have been taken from malt, blacklight, and pitfall traps; from decaying vegetation, compost and animal carcasses; from under animal dung; from fungi; from debris along a beach; and from the nests or nest lining of various rodents such as beaver, marmot, and *Microtus pennsylvanicus* and *M. ochrogaster.*

Falagria sulcata (Paykull)
Figs. 12, 92, 113; Map 10

Staphylinus sulcatus Paykull, 1789, p. 32 [type locality, Sveciae].

Falagria sulcata; Boisduval and Lacordaire, 1836, p. 556; Erichson, 1840, p. 49; Redtenbacher, 1849, p. 651; Fairmaire and Laboulbène, 1856, p. 372; Kraatz, 1856, p. 34; Thomson, 1860, p. 297; Mulsant and Rey, 1875, p. 436; Ganglbauer, 1895, p. 255; Reitter, 1909, p. 74; Cameron, 1939, p. 243; Scheerpeltz, 1958, p. 36; Horion, 1967, p. 202; Palm, 1968, p. 77; Lohse, 1974, p. 67.

Falagria caesa Erichson, 1839, p. 295 [type locality, Brandenburg, Germany].

Falagria sicula Jekel, 1873, p. 33 [type locality, Sicily].

Diagnosis. Adults of this species are extremely similar to those of the closely related *F. dissecta* from which they can be distinguished by the long, erect setae of the abdominal margins and venter at the apex, absence of a pocket-like depression interrupting the pronotal sulcus near the middle, and characteristic spermatheca (Fig. 113).

Description. Length 2.2–3.0 mm (N = 19; $\bar{x} = 2.56$ mm). Color dark rufo-testaceous to piceous; mouthparts, basal antennal segments, and legs generally paler. Habitus as in Figure 12.

Head moderate in size, slightly longer than broad, broadly arcuate-truncate at base. Surface finely and somewhat moderately punctured and pubescent; surface between punctures smooth and shining. Eyes moderate, slightly prominent, equal to length of temples. Antenna moderate in length, incrassate distally, reaching to anterior half of elytra. Prothorax slightly broader than head, broadest across anterior third, strongly converging to base. Disc narrowly and deeply sulcate along median line except at extreme apex, ending in a deep round fovea, without a pocket-like depression near middle. Surface moderately densely punctured and pubescent; punctures asperate towards sulcus in many specimens; surface between punctures smooth and polished. Scutellum strongly bicarinate, as in *dissecta.* Elytra with surface finely, relatively densely and uniformly punctured and pubescent; surface between punctures smooth and shining. Abdomen broad at base, slightly narrower at base than elytra. Terga III–V moderately deeply and transversely impressed at base; impressions with coarse, somewhat obsolete punctures. Tergal surfaces towards apex densely punctured and pubescent; towards base punctures moderately dense and slightly asperate; in most specimens abdominal margins and venter at apex with long, erect setae; surface between punctures smooth and shining.

Male. Eighth tergite with apical margin slightly arcuate at middle with comb of minute denticles. Eighth sternite with apical margin broadly rounded. Median lobe of aedeagus as in Figure 92A. Paramere as in Figure 92B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 113.

Type material. No type material was examined for this common Palearctic species.

Distribution. Horion (1967, p. 202) states this species is widely distributed in the Palearctic region, from Europe, northern Africa, northern Siberia, Asia and Japan. In America north of Mexico, the species is known from northeastern and western North America (Map 10). Specimens have been collected from March through July, and in November

Material examined. 20 specimens. CANADA: *Alberta:* Edm.[onton], November (JHFC) 3. *Ontario:* Ottawa, August (CNCI) 1. *Quebec:* Outrement, July (CNCI) 2; Montreal (CASC) 2. UNITED STATES: ?*Illinois:* Glen View, July (FMNH) 1. *Maryland:* Baltimore, July (CASC) 1. *Massachusetts:* Arlington, April (MCZC) 1. *New Jersey:* Barnegat Bay, August (UCRC) 1; Ocean City, June, July (UCRC) 4. *New York:* Rochester, November (AMNH) 1. *Utah:* Boxelder Co., 10 mi W Brigham City, August (AMNH) 1; Utah Co., Payson, May (AMNH) 1. ?*Virginia:* Ft. Monroe (USNM) 1.

Habitat. Horion (1967, p. 202) claims the species is found under decaying plant material such as compost, weeds, and hay, and also from various rotting fungi. Specimens at hand from Edmonton, Alberta were collected in a haystack.

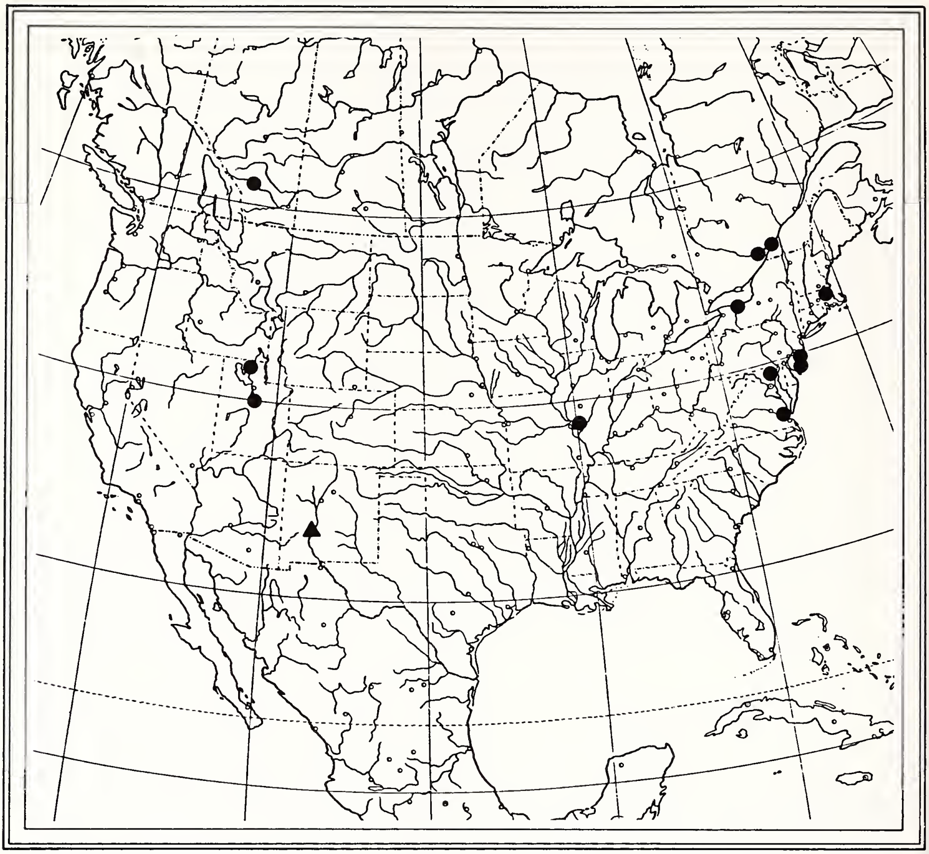
5. *Leptagria* Casey, **Revised Status**

Leptagria Casey, 1906, pp. 227, 249.

As synonym of *Anaulacaspis*: Fenyes, 1912, p. 24; 1920, p. 154; Bernhauer and Scheerpeltz, 1926, p. 574; Blackwelder, 1952, p. 215; Seevers, 1978, p. 147.

Type-species: Leptagria perexilis Casey, fixed by subsequent designation (Fenyes, 1912, p. 24).

Diagnosis. Adults of this genus may be separated from those of the other falagriine genera by the small body size, uniformly punctured elytra, delimited hypomera, simple, coarsely granulose, and medially channeled scutellum, and slightly arcuate apical margin of tergite VIII with a comb of minute denticles (Fig. 72).



Map 10. Distribution of *F. sulcata* (circles) and *Falagrioma socorroensis* (triangles).

Description. Head moderate in size, about as broad as prothorax, arcuate-truncate at base, with distinct rounded angles. Neck very narrow, about ¼ as wide as head across eyes. Eyes well developed, prominent. Labrum (Fig. 27A) subtruncate, anterior angles broadly rounded. Mandibles (Fig. 27D, E) moderate in size, robust, slightly curved at apex; right mandible without an obvious tooth at middle of inner margin; left mandible simple, untoothed. Maxilla (Fig. 27C) with galea slightly longer than lacinia, densely pubescent on membranous apex; lacinia curved towards apex, with several stout, elongate spines at apex, densely pubescent below spines. Maxillary palpus (Fig. 27C) with segment 3 longer and broader than 2; segment 4 elongate-cylindrical. Ligula (Fig. 27B) bifid to near middle, lobes rounded at apex. Mentum (Fig. 27B) trapezoidal, broadly and shallowly emarginate along anterior margin. Labial palpus (Fig. 27B) with segment 1 elongate, broad; segment 2 short and narrower than 1; segment 3 slightly longer than 1, somewhat dilated towards apex, truncate at apex. Antenna moderately long, not strongly widened distally; segment 10 much longer than 9, slightly wider than long; segment 11 shorter than 9 and 10 combined, apex conical and acutely pointed. Prothorax moderately small, narrowed at base. Disc deeply sulcate along median line, sulcus ending posteriorly in small, deep fovea; surface not impressed before base. Prosternum moderate in size before front coxae, posterior margin with broad cusp at middle. Mesospiracular peritremes large, quadrate and contiguous along median line. Mesosternal process wide, truncate at apex, extending to about middle of mesocoxae. Metasternal process broad, usually not separated from mesosternal process. Mesocoxae widely separated. Hypomera delimited from pronotal disc by marginal ridge. Scutellum sparsely granulose, with a smooth impressed median channel in some specimens. Elytra longer and broader than prothorax, surface minutely and uniformly punctured and pubescent, without microsculpture. Abdomen narrower at base than elytra. Terga III–V transversely impressed at base; impressions subimpunctate. Apical margin of tergum VIII with row of minute denticles (Fig. 72).

One species, *perexilis* Casey, occurs in America north of Mexico.

Remarks. The genus *Anaulacaspis* Ganglbauer, with the type species *Aleochara nigra* Gravenhorst, is characterized by the small body size of its members, the very fine or obsolete median pronotal sulcus, the margined hypomera, and the simple apical margin of tergum VIII. No members of *Anaulacaspis* occur in North America. The genera *Leptagria* Casey (type species: *perexilis* Csy.) and *Falagrioma* Casey (type species: *Falagria thoracica* Curtis) have been considered congeneric with *Anaulacaspis* since Fenyes (1912) and by subsequent workers including Seevers (1978). After careful examination of representatives of the type species of each genus, there is no doubt that *Leptagria* and *Falagrioma* should be recognized as distinct genera, clearly separable from *Anaulacaspis*. Characters by which they may be distinguished from *Anaulacaspis* and each other are given above and in the following paragraphs (see *Falagrioma* diagnosis).

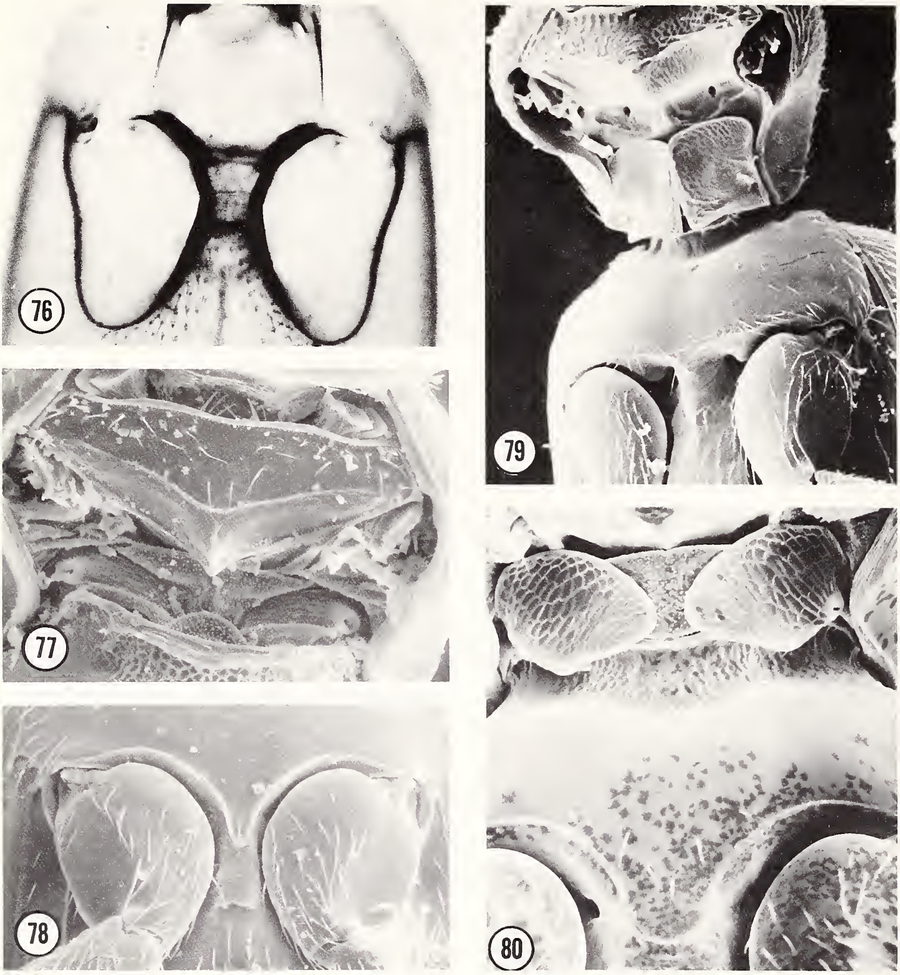
Leptagria perexilis Casey
Figs. 13, 27, 36, 72, 93; Map 11

Leptagria perexilis Casey, 1906, p. 250 [type locality, Texas, Brownsville].
Leptagria hudsonica Casey, 1906, p. 251 [type locality, ?New York (Catskill Mts.)].

Diagnosis. Characters of the genus.

Description. Length 2.0–2.2 mm (N = 3; $\bar{x}$ = 2.1 mm). Color pale to dark brownish-testaceous; mouthparts, basal antennal segments and legs slightly paler. Habitus as in Figure 13.

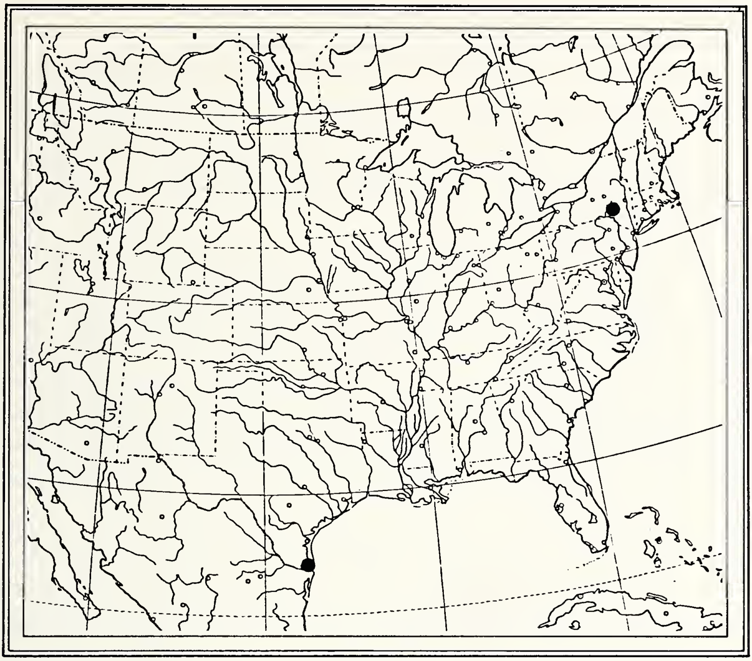
Head (Fig. 13) small, strongly arcuate-truncate at base; basal angles strongly rounded. Surface very sparsely and finely punctured and pubescent; surface between punctures smooth and shining. Eyes rather prominent, equal to length of temples. Antenna nearly reaching middle of elytra. Prothorax (Fig. 36) small, short, nearly equal to length of head, broadest at anterior third, strongly converging to base. Disc deeply sulcate along median line, except at extreme apex, sulcus ending in a deep, round, subbasal fovea. Surface convex, very minutely and sparsely punctured and pubescent; surface between punctures smooth and shining. Scutellum (Fig. 36) flat, finely and densely granulose and pubescent; punctures separated along median line forming smooth, narrow channel in most specimens (Fig. 36). Elytra with surface somewhat sparsely and very minutely punctured and pubescent; punctation uniform throughout;



Figs. 76–80. Thoracic structures of North American Falagriini. 76. *Cordalia obscura,* mesocoxal acetabula. 77. *Falagriota occidua,* prosternum and mesospiracular peritremes. 78. *F. occidua,* meso- and metasternum. 79. *Aleodorus scutellaris,* prosternum, mesospiracular peritremes and meso- and metasternum. 80. *Lissagria laeviuscula,* mesospiracular peritremes and mesosternum.

surface between punctures smooth and polished. Abdomen broad at base, narrower than elytra. Terga III and IV strongly and deeply impressed at base; tergite V shallowly impressed at base; impression of tergite III obsoletely punctured; impressions of terga IV and V impunctate. Tergal surfaces densely and very minutely punctured and pubescent; surface between punctures smooth and shining.

Male. Eighth tergite with apical margin slightly arcuate at middle, with comb of minute denticles (Fig. 72). Apical margin of eighth sternite broadly rounded. Median lobe of aedeagus as in Figure 93A. Paramere as in Figure 93B.



Map 11. Distribution of *Leptagria perexilis.*

Female. Unknown.

Type material. *Leptagria perexilis* Casey. Lectotype, here designated, with the following labels: "Brownsville, Texas, Wickham"/CASEY bequest 1925/Type USNM 38926/"Leptagria perexilis Csy."; my lectotype designation label is attached to it. Four paralectotypes have labels identical to the lectotype.

Leptagria hudsonica Casey. Holotype, with labels as follows: "N.Y." [=Catskill Mountains (Shokan), Mr. H. H. Smith]/CASEY bequest 1925/Type USNM 38927/ "hudsonica Csy."

Type specimens of the above two species are in the Casey collection of the U.S. National Museum (Natural History), Washington.

Distribution. In America north of Mexico, *Leptagria perexilis* is known from southern Texas and southcentral New York (Map 11).

Material examined. 3 specimens. UNITED STATES: *Texas:* Brownsville, July (USNM) 1; San Patricio Co., Welder Wildlife Sanctuary (JHFC) 2.

Habitat. The habitat of this species is poorly known. Specimens at hand have been taken from cow dung and by a pond.

6. *Falagrioma* Casey, **Revised Status**

Falagrioma Casey, 1906, pp. 226, 230.

As synonym of *Anaulacaspis* Ganglbauer: Fenyes, 1912, pp. 24, 27; 1920, p. 154; Bernhauer and Scheerpeltz, 1926, p. 574; Blackwelder, 1952, p. 164; Moore and Legner, 1975, p. 414; Seevers, 1978, p. 147.

As subgenus of *Falagria*: Tottenham, 1957, p. 90.

Variant spelling: *Falagrionia* Tottenham, 1949, p. 387.

Type-species: Falagria thoracica Curtis, fixed by monotypy (Casey, 1906, p. 230).

Anaulacaspis sensu Jarrige, 1946, p. 252; Horion, 1951, p. 169; 1967, p. 203; Lohse, 1974, p. 66; Last, 1979, p. 233.

Anaulacaspis auctorum (ex parte): Bernhauer and Scheerpeltz, 1926, pp. 574, 578; Scheerpeltz, 1934, pp. 1573, 1574; Cameron, 1939, p. 243.

Falagria sensu Kistner, 1971, p. 155.

Falagria auctorum (ex parte): Fowler, 1898, p. 748; Everts, 1898, p. 231; Portevin, 1929, p. 294; Redtenbacher, 1874, p. 129; Rapp, 1933, p. 402.

Biology: Johnson and Halbert, 1902, p. 633; Schaufuss, 1916, p. 226; Jarrige, 1946, p. 252; Rapp, 1933, p. 403; Kistner, 1971, pp. 158, 162–164.

Diagnosis. Adults of this genus are distinguished from those of other falagriine genera by the moderately, deeply sulcate pronotum; delimited hypomera; simple, unmodified and granulose scutellum; area of dense and coarse punctation of the elytra near the scutellum; and arcuate comb of denticles on the apical margin of tergum VIII.

Description. Head arcuate-truncate at base, with rounded hind angles. Neck slender, more than ¼ as wide as head across eyes. Eyes rather small, not prominent. Labrum (Fig. 28A) moderate, transverse, front angles broadly rounded. Mandibles (Fig. 28D, E) robust, prominent. Maxilla (Fig. 28C) with galea densely setose on membranous apex; lacinia curved at apex, with rather long and curved spines on apical half of inner margin, finely setose below spines. Maxillary palpus (Fig. 28C) moderately elongate; segment 1 short; segment 2 elongate, dilated at apex; segment 3 longer than 2, incrassate at apex; segment 4 narrow, subuliform, ⅓ as long as 3. Mentum (Fig. 28B) large, transverse, broadly emarginate on front margin. Ligula (Fig. 28B) small, narrow, and bifid to middle, lobes rounded at apex. Labial palpus (Fig. 28B) elongate; segment 1 long, broad; segment 2 narrower and much shorter, ⅓ as long as 1; segment 3 longer and slightly narrower than 2, distinctly widened towards truncated apex. Antenna stout; terminal segments strongly transverse and compact; segment 11 not as long as 9 and 10 combined. Prothorax short, slightly longer than broad, moderately to strongly narrowed towards base. Disc moderately, deeply sulcate except at extreme apex, sulcus ending basally in a small, rounded or slightly transverse fovea. Prosternum moderately large in front of procoxae, flat, posterior margin cusped at middle. Mesospiracular peritremes large, quadrate, contiguous or slightly overlapping along median line. Mesosternal process free, rather long, obtusely rounded and extending to middle of mesocoxae, separated from metasternal process by a short, depressed isthmus. Mesocoxae moderately separated. Hypomera short, dilated at middle, delimited from disc by fine marginal ridge (Fig. 41). Scutellum flat, unmodified, densely punctured. Elytra longer and broader than prothorax, evenly convex, surface densely punctured towards scutellum (Fig. 48), without microsculpture. Abdomen moderately broad at base. Impressions of terga III–V narrow, deep, and acutely impressed, coarsely and sparsely punctured. Apical margin of tergum VIII with arcuate comb of small denticles.

One species, *socorroensis* n. sp., occurs in America north of Mexico.

Falagrioma socorroensis, new species

Figs. 14, 73, 113, Map 10

Diagnosis. Characters of the genus.

Description. Length 2.8 mm. Color rufo-brunneous; mouthparts, basal antennal segments 1 or 2 and legs paler. Habitus as in Figure 14.

Head moderately small, as broad as prothorax, slightly longer than broad, sides slightly arcuate, base broadly arcuate-truncate, hind angles rounded. Surface between and behind antennal insertions broadly impressed; frons moderately coarsely punctured and pubescent; surface between punctures smooth and polished. Eyes not prominent, equal to length of temples. Antenna moderately long, reaching middle of elytra. Prothorax slightly longer than broad, gradually narrowed to base, longer than head, broadest across anterior third; anterior angles broadly rounded, lateral margins converging towards base, posterior margin slightly arcuate. Disc deeply sulcate along median line except at apex, sulcus ending in a deep, slightly transverse fovea. Surface finely and densely punctured and pubescent, punctures more coarse and dense towards sulcus; surface between punctures smooth and polished. Scutellum nearly convex, coarsely and densely punctured and pubescent. Elytra with surface moderately and finely punctured and pubescent, punctures more coarse and dense towards scutellum (similar to that of Fig. 48); surface between punctures smooth and shining. Abdomen moderately broad at base, gradually narrowed to apex. Terga III–V broadly, transversely impressed at base; impressions densely granulate; impression of tergum III also shallowly foveate. Tergal surfaces towards apex finely and densely punctured and pubescent, punctures more asperate and coarse towards base; surface between punctures smooth and polished.

Male. Unknown.

Female. Eighth tergite with apical margin broadly arcuate at middle, with comb of denticles (Fig. 73). Apical margin of eighth sternite broadly and evenly rounded. Spermatheca as in Figure 114.

Type material. Holotype, female, with labels: Socorro Co., N.M., Aug '94, Snow/ Det. by G. H. Horn/HOLOTYPE Falagrioma socorroensis, E. R. Hoebeke 1981. The type is deposited in the Snow Entomological Museum, University of Kansas, Lawrence.

Distribution. Falagrioma socorroensis is known only from the type locality, Socorro County, New Mexico (Map 10).

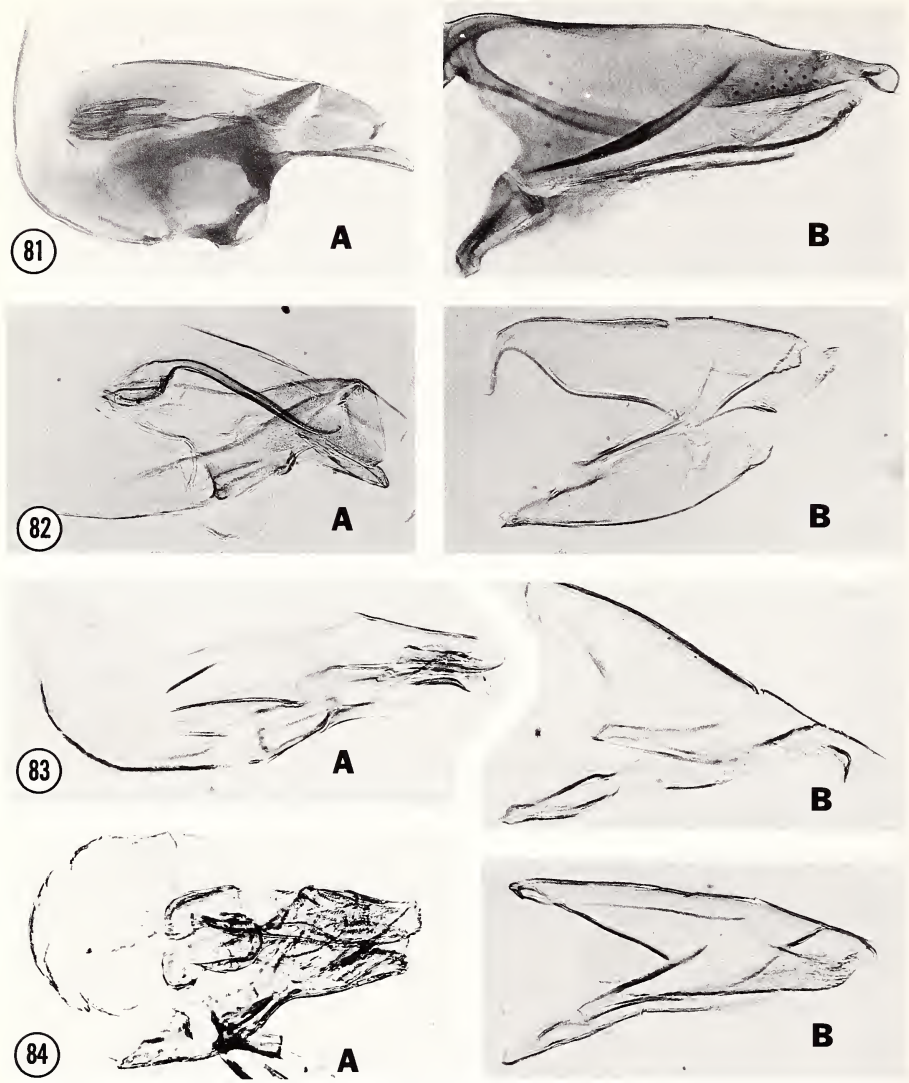
Habitat. Details of the biology and habitat of this species are unknown.

Etymology. Socorroensis is an adjective derived from the place name Socorro County (New Mexico), and refers to the origin of the type specimen.

7. *Aleodorus* Say

Aleodorus Say, 1830, p. 60; 1839, p. 157; Fenyes, 1912, pp. 20, 22, 25; Leng, 1920, p. 124; Bernhauer and Scheerpeltz, 1926, p. 571; Bradley, 1930; pp. 85, 313; Scheerpeltz, 1934, p. 1568; Blackwelder, 1944, p. 158; 1952, p. 45; Arnett, 1968, p. 288; Moore and Legner, 1975, p. 336; Seevers, 1978, pp. 54, 145.

Variant spelling: *Aleoderus* Lynch, 1884, p. 29.



Figs. 81–84. Male genitalia of North American Falagriini [A, median lobe, lateral aspect; B, paramere]. 81. *Cordalia obscura.* 82. *Falagriota occidua.* 83. *Myrmecocephalus cingulatus.* 84. *M. concinnus.*

Type-species: Aleochara bilobata Say, fixed by original designation and monotypy (Say, 1830, p. 60).

Chitalia Sharp, 1883, p. 235; Casey, 1906, pp. 225, 232; Blatchley, 1910, pp. 345, 346; Fenyes, 1912, p. 22; 1918, p. 18; 1920, p. 148; Notman, 1920, p. 731; Blackwelder, 1952, p. 45.

Type-species: Chitalia crenata Sharp, fixed by subsequent designation (Fenyes, 1912, p. 22).

Diagnosis. Adults of this genus are distinguishable from those of other Falagriini by the mesosternum, which is in a plane ventral to the metasternum (Fig. 78), the short, acute mesosternal process (Fig. 78), and highly convoluted flagellum of the internal sac of the median lobe (Figs. 94–97).

Description. Head arcuate-truncate at base, slightly narrower than widest portion of prothorax. Neck very slender, approximately ¼ as wide as head across eyes. Eyes moderately large to small. Labrum (Fig. 29A) short, transverse; anterior angles rounded; anterior margin subtruncate. Mandibles (Fig. 29D, E) moderate in size, apex curved; right mandible with inconspicuous projection at middle of inner margin; left mandible simple. Maxilla (Fig. 29C) with galea shorter than lacinia, densely pubescent on membranous apex; lacinia curved towards hooked apex with spines on apical half of inner margin, densely pubescent on basal half. Maxillary palpus (Fig. 29C) elongate; segment 1 minute; segment 2 elongate, much longer than 1; segment 3 slightly longer than 2; segment 4 very narrow, aciculate. Mentum transverse, slightly emarginate on front margin. Ligula (Fig. 29B) small, bifid; lobes rounded. Labial palpus (Fig. 29B) small; segment 1 stout and long; segment 2 shorter and narrower than 1; apical segment conical, truncate at apex. Antenna very stout; segments 1–3 long, nearly subequal in length; segments 4–10 gradually increasing in width, feebly transverse, densely pubescent; apical segment short, conical, shorter than segments 9 and 10 combined. Pronotum strongly narrowed at base, lateral margins broadly constricted behind widely dilated anterior portion, anterior margin broadly produced, posterior margin truncate to broadly concave. Disc strongly sulcate along median line. Prosternum moderately long, broadly transverse, all but anterior margin and sides concealed by procoxae, hind margin strongly, acutely cusped at middle. Mesospiracular peritremes large, quadrate, contiguous along median line. Mesosternal process abbreviated and broad, extending short distance between mesocoxae. Metasternum smooth, impunctate; metasternal process long and broad, transversely convex. Mesocoxae widely separated. Hypomera not delimited from disc by marginal ridge. Scutellum large, triangular, with coarse, asperate punctures, punctures parted along median line by a narrow to broad, smooth impression in most specimens. Elytra slightly longer than or equal to pronotal length; lateral margins subparallel, slightly arcuate posteriorly; surface evenly convex, finely and closely punctured and pubescent; area of dense and coarse punctation near scutellum. Abdomen elongate, subparallel, gradually tapering to apex, narrower at base than elytra. Terga III–V strongly and transversely impressed at base; impressions coarsely to sparsely punctured or foveate. Apex of tergum VIII with an arcuate row of small denticles.

Members of the genus *Aleodorus* are restricted to the Western Hemisphere. Four species occur in America north of Mexico.

KEY TO SPECIES OF *Aleodorus*

1. Foveae of basal abdominal impressions large and contiguous (Fig. 57); size large, most specimens greater than 3.0 mm 2
– Foveae of basal abdominal impressions coarse and clearly separated (Fig. 60); size small, most specimens under 2.5 mm . . . . *partitus* (LeConte)

2. Foveae of abdominal impressions shallow, basins minutely punctulate (appearing finely granulose at high magnification) (Fig. 59) . . . . *intricatus* (Casey)
– Foveae of abdominal impressions deeper, basins scarcely punctulate (appearing smooth or nearly so at high magnification) (Fig. 58) 3
3. Scutellum with broad, smooth, and impressed median channel (Fig. 37) . . . . *scutellaris* (LeConte)
– Scutellum without broad, median channel (though some specimens with a faint, narrow channel) . . . . *bilobatus* (Say)

Aleodorus partitus (LeConte)

Figs. 15, 60, 94, 115; Map 12

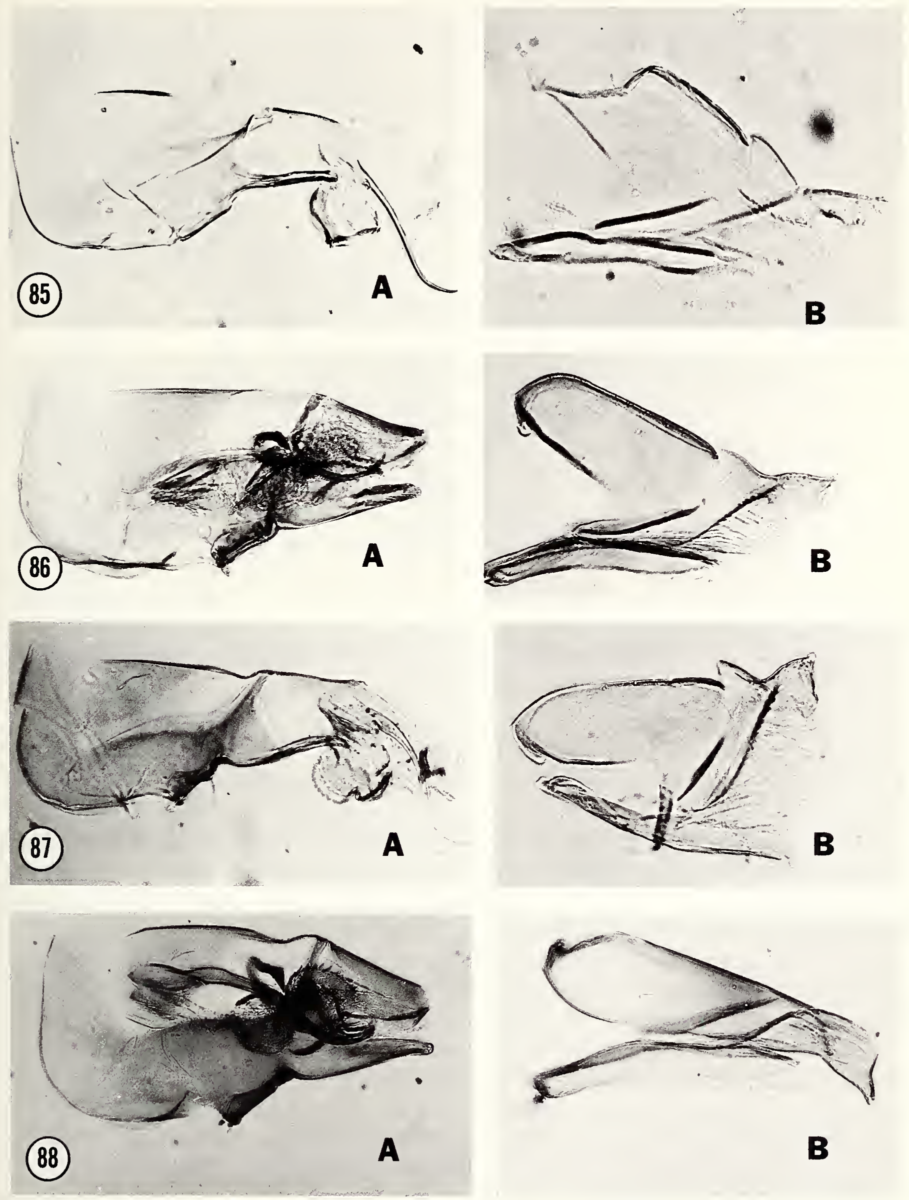
Falagria partita LeConte, 1866, p. 371 [type locality, Louisiana].
Chitalia floridana Casey, 1906, p. 237 [type locality, Florida].
Chitalia novella Casey, 1911, p. 176 [type locality, Texas, Austin, on the Colorado River above Columbia].
Aleodorus partita; Bernhauer and Scheerpeltz, 1926, p. 572.
Aleodorus partitus; Notman, 1920, p. 730; Scheerpeltz, 1934, p. 1568.

Diagnosis. Adults of *Aleodorus partitus* are the smallest of the genus in America north of Mexico. In addition to small size, they may be separated from others of the genus by the few, coarse, well-separated foveae of the basal impression of tergum III (Fig. 60).

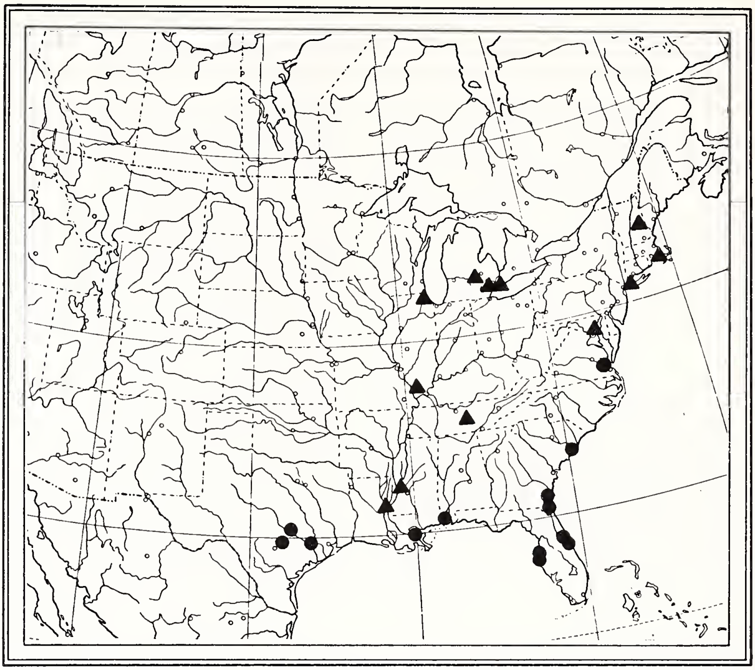
Description. Length 2.0–2.3 mm (N = 13; $\bar{x}$ = 2.2 mm). Color uniformly light to dark rufo-testaceous; mouthparts, antennae and legs pale, head and abdomen occasionally dark. Habitus as in Figure 15.

Head (Fig. 15) relatively large, longer than broad, not quite as broad as prothorax, arcuate-truncate at base; basal angles broadly rounded. Surface minutely and sparsely punctured and pubescent; surface between punctures smooth and polished. Eyes equal to length of temples. Antenna stout, reaching to basal ⅓ of elytra or slightly beyond. Prothorax (Fig. 15) as wide as long, narrower than head, broadest at anterior third, strongly narrowing and converging to base; lateral margins slightly sinuate posteriorly; posterior margin nearly straight or slightly arcuate. Disc strongly sulcate along median line except extreme apex, sulcus ending in subbasal fovea; surface sometimes broadly impressed and flattened adjacent to sulcus. Surface minutely and sparsely punctured and pubescent; surface between punctures smooth and shining. Scutellum flat, sparsely and coarsely punctured; punctures asperate, with a smooth impressed channel along median line in some specimens. Elytra with surface minutely, sparsely and uniformly punctured and pubescent, except area of dense and coarse punctation near scutellum. Abdomen broad at base, narrower than elytra. Terga III–V moderately and transversely impressed at base; impressions of terga III and IV with several coarse and well-separated foveae (Fig. 60); impression of tergum V occasionally with fewer and subobsolete punctures (sometimes absent altogether). Tergal surfaces minutely and sparsely punctured and sparsely pubescent; punctures tending to be fine and partly asperate towards base; surface between punctures smooth, polished.

Male. Eighth tergite with apical margin broadly arcuate at middle, with comb of minute denticles. Eighth sternite with apical margin broadly rounded. Median lobe of aedeagus as in Figure 94A. Paramere as in Figure 94B.



Figs. 85–88. Male genitalia of North American Falagriini. 85. *Myrmecocephalus gracilis.* 86. *M. sculpturatus.* 87. *M. arizonicus.* 88. *M. gatineauensis.*



Map 12. Distribution of *Aleodorus partitus* (circles) and *A. scutellaris* (triangles).

Female. Eighth tergite and sternite with apical margin as in the male. Spermatheca as in Figure 115.

Type material. Falagria partita LeConte. Lectotype, here designated, with the following labels: "LS"(?)/partita 2/partita 3; my lectotype designation label is attached to it. This specimen is mounted on a paper point (point marked with red) and on the same pin with another point-mounted paralectotype. A third paralectotype in the LeConte collection is labeled: "Fla."/Type 6242. This specimen was not selected as the lectotype because the abdomen is missing. In addition, I have examined another specimen (paralectotype) in the Horn collection labeled as *partita.*

Chitalia floridana Casey. Lectotype, here designated, with labels as follows: "aulover, II ch 25, Fla."/CASEY bequest 1925/Type USNM 38909/"floridana Csy."; my lectotype designation label is attached to it. One paralectotype is labeled: "Enterprise, Fla.," while another is with labels: "Fla." [=Enterprise]. All specimens are in the U.S. National Museum (Natural History), Washington.

Chitalia novella Casey. Holotype, with labels as follows: "Tex" [=Austin on the Colorado River above Columbia.]/CASEY bequest 1925/Type USNM 38908/"novella Csy." The specimen is in the collection of the U.S. National Museum (Natural History), Washington.

Distribution. Aleodorus partitus is known from Virginia south to Florida and west to Texas (Map 12). Specimens have been collected from February through October.

Material examined. 43 specimens. UNITED STATES: *Alabama:* Mobile (FMNH)

3. *Florida:* Dunedin, March, April (CUIC, MCZC) 8; St. Petersburg, March (MCZC) 2; Fernandina Beach, March (MCZC) 1; Enterprise, May, June (AMNH, MCZC) 3; Sand Point, February, April (USNM) 2; Titusville (AMNH) 1; state label only (AMNH) 3. *Georgia:* St. Simons Island, July (MCZC) 1. *Louisiana:* New Orleans, March (USNM) 1; state label only (MCZC) 5. *South Carolina:* Charleston Co., Climax, October (JHFC) 1. *Texas:* New Braunfels, June (MCZC) 1; Columbus, June, July (USNM) 7; state label only (USNM, MCZC) 3. *Virginia:* Ft. Monroe (USNM) 1.

Habitat. Few details are available regarding biology or habitat of this species. Two Texas specimens were collected from the nest of a beaver.

Aleodorus intricatus (Casey)

Figs. 16, 45, 59, 95, 116; Map 13

Chitalia intricata Casey, 1906, p. 234 [type locality, New Mexico, Gallup].
Aleodorus intricata; Bernhauer and Scheerpeltz, 1926, p. 572.
Aleodorus intricatus; Scheerpeltz, 1934, p. 1568; Moore and Legner, 1975, p. 336.

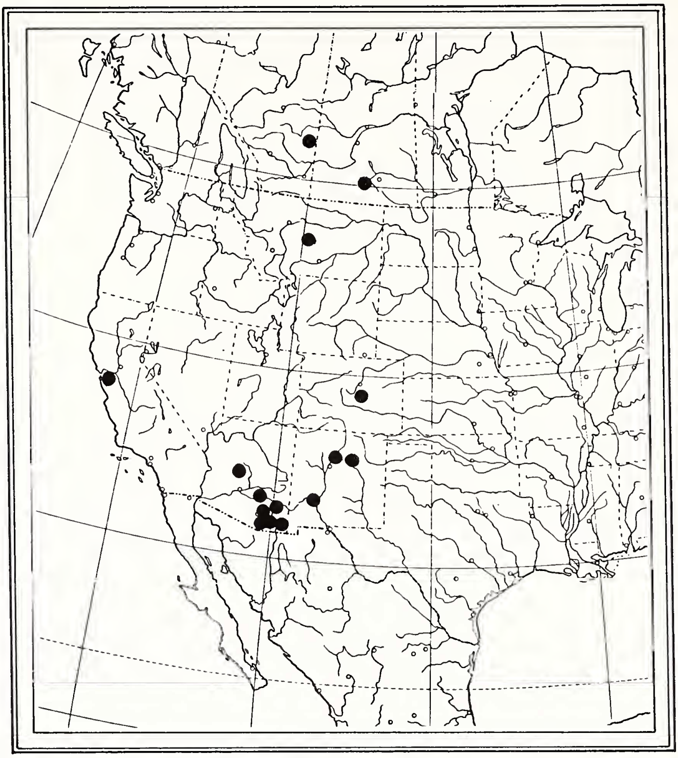
Diagnosis. Adults are very similar externally to those of *bilobatus* and *scutellaris,* but with an allopatric western North American distribution (Map 13), and differing by the minutely granulose basins of the foveae of abdominal impressions III–V (Fig. 59).

Description. Length 3.1–4.1 mm (N = 92; $\bar{x} = 3.52$ mm). Color uniformly light to dark brownish-testaceous; in some specimens head darker and abdomen beyond third segment piceous; mouthparts, basal 2 antennal segments and legs paler. Habitus as in Figure 16.

Head (Fig. 16) slightly longer than broad, not as broad as prothorax, slightly impressed on median line of occiput, arcuate-truncate at base, basal angles broadly rounded. Surface sparsely, finely punctured and pubescent; surface between punctures smooth and polished. Eyes equal to length of temples. Antenna similar in structure to that of *bilobatus.* Prothorax (Fig. 16) nearly as wide as long, broadest anteriorly, narrowing and converging in basal half; lateral margins strongly sinuate; posterior margin nearly straight. Disc deeply sulcate along median line except extreme apex, sulcus ending in a subbasal fovea. Surface finely, sparsely punctured and pubescent, punctures somewhat asperate, more coarse and dense towards sulcus; surface between punctures smooth and shining. Scutellum (Fig. 45) coarsely punctured, with a slightly narrow but distinct, smooth channel along median line, complete to apex in some specimens. Elytra with surface minutely and sparsely punctured and pubescent, punctures tending to be more dense and coarse towards scutellum; surface between punctures smooth and polished. Abdomen broad at base, narrower than elytra. Terga III–V strongly and transversely impressed at base; impressions strongly foveate, basins densely and minutely punctulate (Fig. 59). Surface finely, sparsely punctured and pubescent towards apex; punctures more asperate and coarse at base; surface between punctures smooth and polished.

Male. Eighth tergite with apical margin broadly arcuate at middle, with comb of denticles. Eighth sternite with apical margin broadly, evenly rounded. Median lobe of aedeagus as in Figure 95A. Paramere as in Figure 95B.

Female. Eighth tergite and sternite with apical margin as in the male. Spermatheca as in Figure 116.



Map 13. Distribution of *A. intricatus.*

Type material. Lectotype, here designated, with labels as follows: "N.M." [=Gallup, Mr. H. F. Wickham]/CASEY bequest 1925/Type USNM 38907/"intricata Csy."; my lectotype designation label is attached to it. One paralectotype has labels identical to the lectotype. Both specimens are in the U.S. National Museum (Natural History), Washington.

Distribution. Aleodorus intricatus occurs at moderately high elevations in western North America, from southern Alberta and Saskatchewan south to southern Arizona and New Mexico, and west to California (Map 13). Specimens have been collected from March through November, with most collections made from May through July.

Material examined. 237 specimens. CANADA: *Alberta:* Gooseberry Lk., October (JHFC) 1. *Saskatchewan:* Willows, June (CNCI) 5; Willows, 49°37′, 105°52′, June (CNCI) 1. UNITED STATES: *Arizona:* Sierra Vista, Cochise Co., March, April, May, October, November (CNCI) 18; Ramsey Canyon, 5,200 ft, 15 mi S of Sierra Vista, August, September (CNCI) 31; Pinery Canyon, Chiricahua Mts., 6,600 ft, June (CNCI) 3; Miller Canyon, Huachuca Mts., 6,500–7,000 ft, August (CNCI) 1; Madera Canyon, Santa Rita Mts., May (AMNH) 8; Ash Spring, Chiricahua Mts., May (AMNH); Ramsey Canyon, Huachuca Mts., 6,500–7,000 ft, May (AMNH) 20; Green House Canyon, 3 mi S of SWRS, Chiricahua Mts., 5,500 ft, May (AMNH) 21; E. Turkey

Creek, Chiricahua Mts., 6,000 ft, May (AMNH) 15; 5 mi W of Portal, 5,400 ft, April (AMNH) 5; Pinal Mts., Gila Co. (MCZC) 1; S. Rita Mts., May, June (USNM) 10; Prescott (USNM) 1; Chiricahua Mts., May, June, July (USNM) 36; Mt. Lemmon, 9,000 ft, May (UCRC) 1; Pinaleno Mts., Wet Canyon, 6,000 ft, July (CNCI) 3; 7 mi W of East Turkey Creek, July (CNCI) 1; 5 mi W of Portal, 5,500 ft (CNCI) 1; Cochise Co., Portal, 5,000 ft, July (CNCI) 2; Pinal Co., Oracle, 4,500 ft, May (CNCI) 1; Santa Rita Mts., Madera Canyon, 5,500 ft, August (CNCI) 1; Ramsey Canyon, Cochise Co., 5,200 ft, July (CNCI) 1; Copper Canyon, Huachuca Mts., June (FMNH) 1; Graham Mts., Wet Canyon, September (FMNH) 1; Sunnyside, Cochise Co., June (FMNH) 1; Santa Rita Mts., Madera Canyon, November (FMNH) 2; Wet Canyon Camp Gr., Graham Mts., 6,000 ft, September (FMNH) 2; state label only (MCZC) 1. *California:* Alameda Co., September (FMNH) 1. *Colorado:* Colorado Springs, 6,000–7,000 ft, June (MCZC) 1. *Montana:* state label only (INHS) 1. *New Mexico:* Las Vegas, August (MCZC, USNM) 6; Jemez Mts., April (CASC) 7; Sierra Co., Emory Pass, July (CNCI) 1; [El] Porvenir (FMNH) 1.

Habitat. Little is known about the biology and habitat of this species. Specimens at hand have been taken from leaf litter, and from along a stream shore.

Aleodorus scutellaris (LeConte), **Revised Status, New Combination**

Figs. 17, 37, 57, 58, 79, 96, 117; Map 12

Falagria scutellaris LeConte, 1866, p. 370 [type locality, New York, Coney Island].

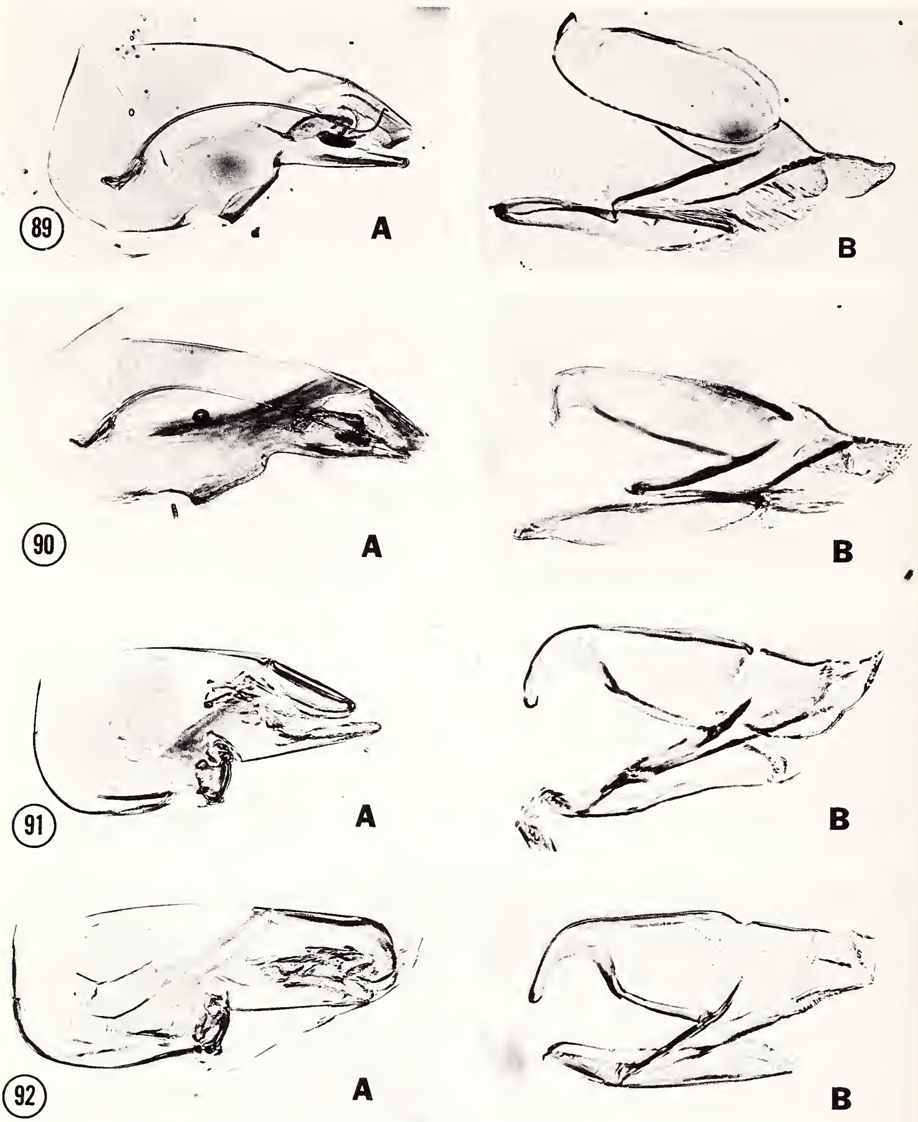
Chitalia granulosa Casey, 1906, p. 235 [type locality, Mississippi, Vicksburg]. **New Synonym.**

Chitalia illustris Casey, 1906, p. 235 [type locality, Mississippi, Vicksburg]. **New Synonym.**

Diagnosis. This species is extremely similar to *bilobatus* in appearance but differs by the broad, smooth, impressed channel of the scutellum (Fig. 37), and presence of a series of the fine ridges on the inner surface of the paramere of the male genitalia (Fig. 96B).

Description. Length 2.9–3.6 mm (N = 38; $\bar{x}$ = 3.25 mm). Color light to dark ferrugineous, or piceous; mouthparts, basal antennal segments and legs paler in most specimens. Habitus as in Figure 17.

Head (Fig. 17) slightly longer than wide, nearly as wide as prothorax, sides evenly arcuate, arcuate-truncate at base, basal angles broadly rounded. Punctation and pubescence fine and moderately dense on dorsum; surface between punctures smooth and shining. Eyes equal to or longer than temples. Antenna moderately stout, elongate, reaching middle of elytra. Prothorax (Figs. 17, 37) about as wide as head, broadest across anterior third, narrowing and converging strongly towards base, lateral margins slightly sinuate. Disc strongly sulcate along median line except at extreme apex, sulcus ending in a broad, subbasal fovea. Surface densely, coarsely punctured, and moderately densely pubescent; surface between punctures smooth and shining. Scutellum (Fig. 37) flat or slightly convex, densely punctured, with a broad, smooth, and slightly impressed, median channel. Elytra with surface moderately, densely and finely punctured and pubescent, punctures more coarse, dense, and asperate near scutellum; surface between punctures smooth and polished. Abdomen broad at base, slightly



Figs. 89–92. Male genitalia of North American Falagriini. 89. *Myrmecocephalus caviceps.* 90. *M. pinalicus.* 91. *Falagria dissecta.* 92. *F. sulcata.*

narrower than elytra. Terga III–V moderately strongly and transversely impressed at base; impressions coarsely foveate (Fig. 57); basins of foveae nearly smooth (or slightly granulose) and shining (Fig. 58). Tergal surfaces moderately densely punctured, punctures fewer and more asperate on basal segments; surface between punctures smooth and polished.

Male. Eighth tergite with apical margin broadly arcuate at middle, with comb of denticles. Eighth sternite with apical margin broadly and evenly rounded. Median lobe of aedeagus as in Figure 96A. Paramere as in Figure 96B.

Female. Eighth tergite and sternite with apical margins as in male. Spermatheca as in Figure 117.

Type material. Falagria scutellaris LeConte. Holotype, with labels as follows: pink disc [=Middle States]/Coney Isl., Aug./Type 6238/"Falagria scutellaris." The specimen is in the LeConte collection of the Museum of Comparative Zoology, Harvard University, Cambridge.

Chitalia granulosa Casey. Holotype, with labels: "Miss" [=Vicksburg, Miss.]/CASEY bequest 1925/Type USNM 38905/"granulosa Csy." The specimen is in the U.S. National Museum (Natural History), Washington.

Chitalia illustris Casey. Holotype, with labels as follows: "Miss" [=Vicksburg, Miss.]/CASEY bequest 1925/Type USNM 38906/"illustris Csy." The specimen is in the U.S. National Museum (Natural History), Washington.

Distribution. Aleodorus scutellaris is widely distributed in eastern North America, from New Hampshire west to Michigan and Illinois and south to Louisiana (Map 12). Specimens have been collected from March through October.

Synonymy. The holotypes of both *granulosa* and *illustris* are identical to that of *scutellaris* with respect to the narrow (or broad in some specimens), impressed median channel of the scutellum. On the basis of this character, they are synonymized.

Material examined. 62 specimens. CANADA: *Ontario:* Kent Co., Tilbury, May (FMNH) 1. UNITED STATES: *Illinois:* Pine Hills Field Sta., Union Co., May (CNCI) 22; Volo Bog, Lake Co., March (CNCI) 10. *Louisiana:* Concordia Co., 5 mi W Ferriday, May (CNCI) 3. *Maryland:* Baltimore, July (CASC) 2. *Massachusetts:* Marion, August, September (MCZC) 8. *Michigan:* Detroit, September (MSUC) 1; Rose Lake Wildlife Expt. Sta., Clinton Co. and Shiawassee Co., October (ERHC) 2. *New Hampshire:* Bretton Woods (CASC) 1. *Tennessee:* state label only (USNM, DEFW) 12.

Habitat. There are no details known about the biology and habitat of this species.

Remarks. Since its original description (LeConte, 1866, p. 370), this species has been considered conspecific with *bilobatus.* The presence of several, closely spaced, heavily sclerotized ridges on the inner surface of the paramere of the male genitalia (Fig. 96B), and the broad, smooth, impressed median channel of the scutellum serve to distinguish *scutellaris* from *bilobatus.* Herein, I recognize *scutellaris* as a valid species.

Aleodorus bilobatus (Say)

Figs. 18, 29, 74, 97, 118; Map 4

Aleochara bilobata Say, 1830, p. 60 [original type locality, Missouri and Indiana; neotype locality, Indiana, Indianapolis]; 1839, p. 157.

Aleodorus bilobatus; Bland, 1865, p. 392; Fenyes, 1912, p. 20; 1918, p. 21; Jaques, 1951, p. 106.

Chitalia bilobata; Casey, 1906, p. 235; Blatchley, 1910, p. 346.

Chitalia canadensis Casey, 1906, p. 236 [type locality, Canada, Ottawa].

Chitalia nigrescens Casey, 1906, p. 236 [type locality, Iowa, Iowa City].

Chitalia turbata Casey, 1911, p. 176 [type locality, New Jersey, Elizabeth].

Diagnosis. Adults of *Aleodorus bilobatus* are extremely similar in appearance to those of the sympatric *scutellaris,* but may be readily distinguished from the latter by the uniformly and coarsely granulose scutellum, which is only slightly parted along the median line by a fine impressed line in some specimens.

Description. Length 2.8–4.1 mm (N = 85; $\bar{x} = 3.24$ mm). Color light to dark piceous-brown or piceous-black; head and tergal impressions darker; terga VI and VII also darker; mouthparts, basal antennal segments and legs generally paler. Habitus as in Figure 18.

Head (Fig. 18) little longer than wide, as wide as prothorax, sides slightly arcuate, parallel, arcuate-truncate at base, basal angles broadly rounded. Punctation and pubescence fine and sparse on dorsum, occiput with more asperate punctures, narrow median area between and behind antennae devoid of punctures; surface between punctures smooth and shining. Eyes equal to length of temples. Antenna stout, moderately long, reaching middle of elytra or slightly beyond. Prothorax (Fig. 18) about as wide as head, broadest across anterior third, narrowing and converging strongly towards base, lateral margins strongly sinuate, posterior margin broadly emarginate. Disc strongly sulcate along median line except extreme apex, sulcus ending in subbasal fovea. Surface finely, sparsely punctured and pubescent, punctures tending to be more asperate and dense towards sulcus; surface between punctures smooth and shining. Scutellum flat, densely punctured, punctures asperate; punctures parted along median line by a fine, narrow line in some specimens. Elytra with surface minutely and moderately punctured and pubescent, punctures towards scutellum more dense and slightly asperate; surface between punctures smooth and polished. Abdomen broad at base, nearly as broad as elytra. Terga III–V very strongly and transversely impressed at base; impressions coarsely foveate; basins of foveae shining and smooth or slightly punctulate (appearing slightly granulate). Tergal surfaces moderately punctured, punctures asperate, more strongly so towards base; surface between punctures smooth and shining.

Male. Eighth tergite with apical margin broadly arcuate at middle, with comb of denticles (Fig. 74). Eighth sternite with apical margin broadly, evenly rounded. Median lobe of aedeagus as in Figure 97A. Paramere as in Figure 97B.

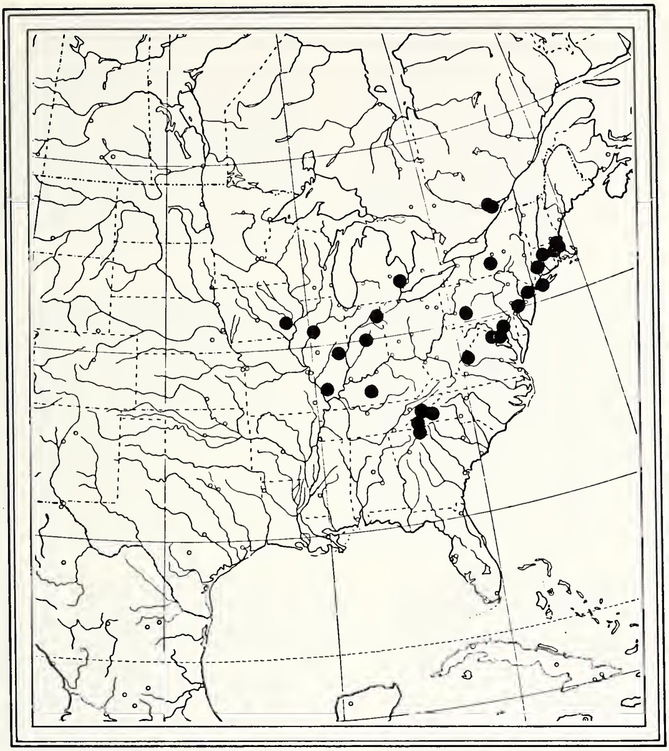
Female. Apical margin of eighth tergite and sternite as in the male. Spermatheca as in Figure 118.

Type material. Aleochara bilobata Say. Say's type of this species undoubtedly has been lost or destroyed. I have designated, as neotype of this species, a specimen in the Fall collection in the Museum of Comparative Zoology, Harvard University, with the labels: Ind./Indianapolis, 7/14-10/4117 det. A. Fenyes/H. C. Fall collection; my neotype designation label is attached to it.

Chitalia canadensis Casey. Lectotype, here designated, with labels as follows: "W.H.H., Ottawa, Can."/CASEY bequest 1925/Type USNM 38902/"canadensis Csy."; my lectotype designation label is attached to it. Two paralectotypes have the same label data as the lectotype.

Chitalia nigrescens Casey. Holotype, with the following labels: "Iowa City, Wickham"/CASEY bequest 1925/Type USNM 38903/"nigrescens Csy."

Chitalia turbata Casey. Holotype, with labels as follows: "Elizabeth, N.J."/CASEY bequest 1925/Type USNM 38904/"turbata Csy."



Map 14. Distribution of *A. bilobatus.*

Type specimens of the above three species are in the Casey collection in the U.S. National Museum (Natural History), Washington.

Distribution. Aleodorus bilobatus occurs throughout eastern North America, from Ontario and southern New England south to North Carolina and Georgia and west to Illinois and Iowa (Map 14). Specimens have been collected from March to November.

Material examined. 277 specimens. CANADA: *Ontario:* Merivale, April (CNCI) 6; Ottawa (CNCI) 5; Hull (CNCI) 1; country label only (USNM) 3. UNITED STATES: *Connecticut:* Cornwall, April (CNCI, CUIC) 8. *District of Columbia:* Washington (MCZC, USNM) 5; Washington, November (USNM) 2; Mt. Hamilton, November (USNM) 1; Washington (INHS) 1; Rosslyn, Washington, March (USNM) 1. *Georgia:* Clayton, 2,000–3,700 ft, June (AMNH) 2. *Illinois:* Pine Hills Field Sta., Union Co., May (CNCI) 1; Charleston, October (INHS) 3; Peoria, October (INHS) 1; state label only (INHS, DEFW, AMNH) 14. *Indiana:* Indianapolis, July (MCZC) 1; Mineral Springs, September (USNM) 1; Marion Co., April (CASC) 1; Fort Wayne, Allen Co., August (UCRC) 2. *Iowa:* Iowa City, October (FMNH) 1. *Kentucky:* Mammoth Cave Nat'l. Park, Edmonton Co., March (FMNH) 5. *Maryland:* Bladensburg, September

(USNM) 1; Freshet, Plummer's Isl., March (USNM) 2; College Park, April (USNM) 1; Plummer's Isl., April, September, October (USNM) 4; Sparrow Point, September (CASC) 1; Baltimore, July (CASC) 1; Annapolis, January (USNM); Prince Georges Co., Beltsville, May (JHFC) 1; Prince Georges Co., Patuxent Wildlife Refuge, June (DENH) 10; state label only (DEFW) 4. *Massachusetts:* Springfield, April, September (USNM, MCZC) 2; Swansea (MCZC) 1; Lowell (MCZC) 4; Beverly (MCZC) 1; Tyngsboro, April, December (MCZC, MSUC) 3; Framingham, November (CASC, MCZC, USNM) 6; Sherborn, May (MCZC) 1; Arlington, May (MCZC) 2; state label only (INHS, MCZC) 7. *Michigan:* Detroit, October (USNM, SEMC, MCZC) 17; Clarkston, October (USNM) 1; state label only (MCZC) 6. *Pennsylvania:* Darby, March (CASC) 11; Belfast, May (CASC) 1; Manyuak, March (CASC) 1; Jeannette, July (ICCM) 1. *New Jersey:* Union, April, November (AMNH) 5; Roselle, April (AMNH, USNM) 10; Elizabeth, November (MCZC) 1; Snake Hill (AMNH) 8; Anglesea, March (MCZC) 2; Monmouth, October (USNM) 2; Roselle Park, March, April (AMNH, USNM) 2; Hackensack (CASC) 1; Berkeley Heights, May (AMNH) 1; Tenafly (CUIC) 1; state label only (AMNH) 1. *New York:* Rockaway Beach, Long Island (NYSM) 5; Mendon, May (CUIC) 2; Zurich, Wayne Co., October (AMNH) 1; Mosholu (AMNH) 1; McLean Bog, April (ERHC) 1; Howlett, L.I., May (USNM) 3; Wyandanck, L.I., November (USNM, CUIC) 2. *North Carolina:* Mt. Pisgah, October (NYSM) 6; Black Mts., September, October (AMNH) 31; Highlands, June (MCZC) 1; Retreat, June (USNM) 1. *Tennessee:* Cocke Co., 6 mi SE Cosby, May (DENH) 1. *Virginia:* Warm Springs (AMNH) 3; Chain Bridge, September (USNM) 1; Glencarlyn, September (MCZC) 1; Alex Co., September (MCZC) 1; Fredricksburg, April (USNM) 1; Falls Church, October, November (USNM) 18; state label only (DEFW) 2. *West Virginia:* Ft. Pendleton, July (USNM) 1.

Habitat. The species is known to occur in wet biotopes. Blatchley (1910, p. 346) claimed that specimens have been taken beneath bark and by sifting vegetable debris in moist woods. Specimens at hand have been taken from along a riverbank and in a swamp, from dead grass, from leaf litter piled in a fence row and in a ditch of a mesic forest, from moss, and in a duff sample.

8. *Lissagria* Casey

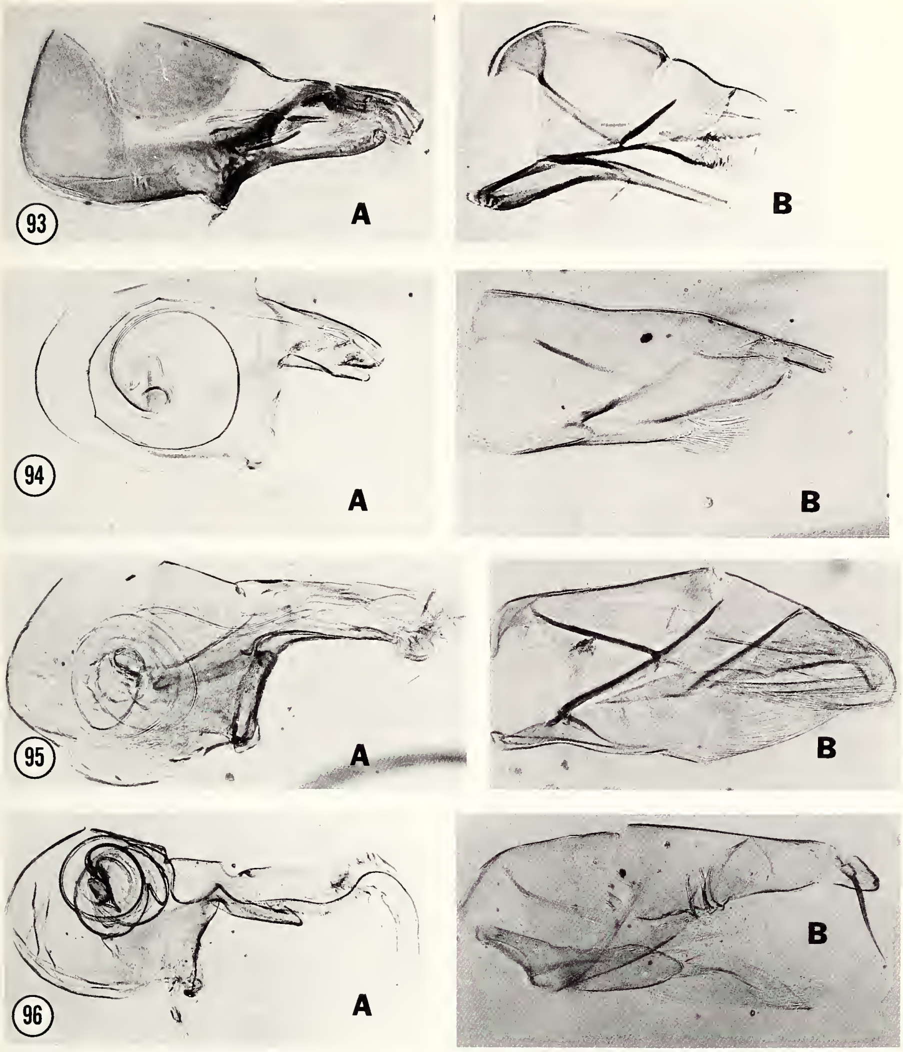
Lissagria Casey, 1906, p. 252 (proposed as subgenus of *Falagria*); Seevers, 1978, p. 145.

As subgenus of *Falagria*: Fenyes, 1912, pp. 21, 23, 26; 1920, p. 155; Leng, 1920, p. 124; Notman, 1920, p. 731; Bernhauer and Scheerpeltz, 1926, p. 579; Bradley, 1930, p. 313; Scheerpeltz, 1934, pp. 1572, 1574; Blackwelder, 1952, p. 223; Arnett, 1968, p. 289; Moore and Legner, 1975, p. 414.

Type-species: Falagria laeviuscula LeConte, fixed by subsequent designation (Fenyes, 1912, p. 23).

Omoschema Notman, 1920, p. 731; Bernhauer and Scheerpeltz, 1926, p. 579; Blackwelder, 1952, p. 274; Arnett, 1968, p. 289; Moore and Legner, 1975, p. 461; Seevers, 1978, p. 148. **New Synonym.**

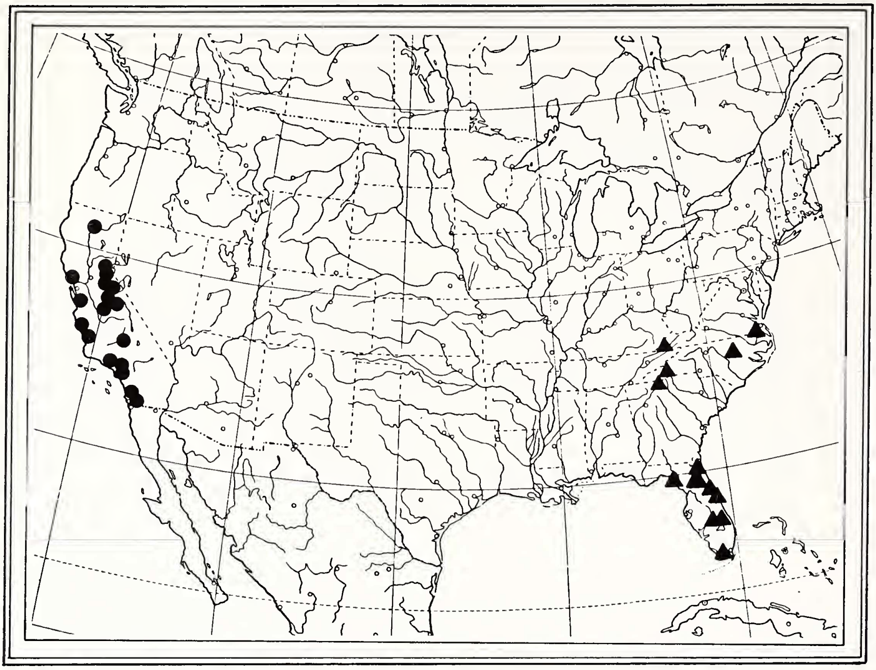
Type-species: Omoschema laticeps Notman, fixed by monotypy (Notman, 1920, p. 731).



Figs. 93–96. Male genitalia of North American Falagriini. 93. *Leptagria perexilis*. 94. *Aleodorus partitus*. 95. *A. intricatus*. 96. *A. scutellaris*.

Diagnosis. Adults of *Lissagria* may be easily distinguished from those of other Falagriini by the dense punctation of the elytra adjacent to the scutellum, presence of an arcuate row of denticles on the apical margin of tergum VIII, hypomera not delimited by a marginal ridge, and the simple, unmodified scutellum.

Description. Head moderately small, rounded or arcuate-truncate behind, slightly flattened dorsally or convex. Neck very slender, scarcely more than ⅕ as wide as



Map 15. Distribution of *Lissagria laeviuscula* (circles) and *L. laticeps* (triangles).

head across eyes. Eyes rather small, but slightly prominent. Labrum (Fig. 30A) transverse, angles broadly rounded, anterior margin truncate. Mandibles (Fig. 30D, E) robust, stout, apex curved; right mandible with small, obscure tooth at middle of inner margin; left mandible simple. Maxilla (Fig. 30C) with galea longer than lacinia, densely pubescent on membranous apex; lacinia with several elongate spines at apex, densely pubescent below spines. Maxillary palpus (Fig. 30C) slender; segment 3 longer than 2, broadened apically; segment 4 elongate, subuliform. Mentum transverse, broadly emarginate along anterior margin. Ligula (Fig. 30B) bifid; lobes rounded apically. Labial palpus (Fig. 30B) elongate; segment 1 long, broader than other segments; segment 2 short; segment 3 longer than 2, filiform. Antenna moderately long, gradually and slightly broadened distally; segments 2 and 3 elongate, subequal in length; segments 5–10 gradually transverse; segment 11 not quite as long as 9 and 10 combined. Prothorax slightly to moderately narrowed at base, evenly convex to somewhat flattened. Disc finely to deeply sulcate along median line except at apex, sulcus ending basally in a large, deep, round to transverse fovea. Prosternum moderately large in front of procoxae, posterior margin broadly angulate at middle. Mesospiracular peritremes (Fig. 80) moderately large, inner margins broadly rounded in most specimens, nearly attaining median line. Mesosternal process extending to middle of mesocoxae, broadly to acutely rounded at apex, slightly separated from metasternal projection by a short, scarcely depressed isthmus or isthmus absent.

Mesocoxae moderately separated. Hypomera not delimited from pronotal disc by a marginal ridge. Scutellum simple, flat, and densely punctured and pubescent, without carinae or medial impunctate groove. Elytra longer and broader than prothorax, convex, densely punctate near scutellum. Abdomen rather broad at base, not quite as broad at base as elytra. Terga III–V broadly impressed at base; impressions impunctate or with a few obsolete punctures. Apical margin of tergum VIII with an arcuate row of small denticles.

At present, the genus *Lissagria* is known only from North America, with two species occurring north of Mexico.

Synonymy. Omoschema is here considered a junior synonym of *Lissagria.* The characters given by Notman (1920) as diagnostic for *Omoschema* are basically the same as those for *Lissagria.* Seevers (1978) separated the two genera in his key on the basis of differences in the relative length of the mesosternal process, shape of the pronotum, and head shape. I regard these differences as extremely slight and insufficient to separate genera.

KEY TO SPECIES OF *Lissagria*

1. Small, most specimens less than 3.0 mm; pronotal sulcus deep, ending in a deep, round fovea; head arcuate-truncate at base; known from southern United States .... *laticeps* (Notman)
– Larger, most specimens greater than 3.0 mm; pronotal sulcus fine and shallow, ending in a large, transverse shallow fovea; head broadly rounded at base; known from California .... *laeviuscula* (LeConte)

Lissagria laticeps (Notman), **New Combination**

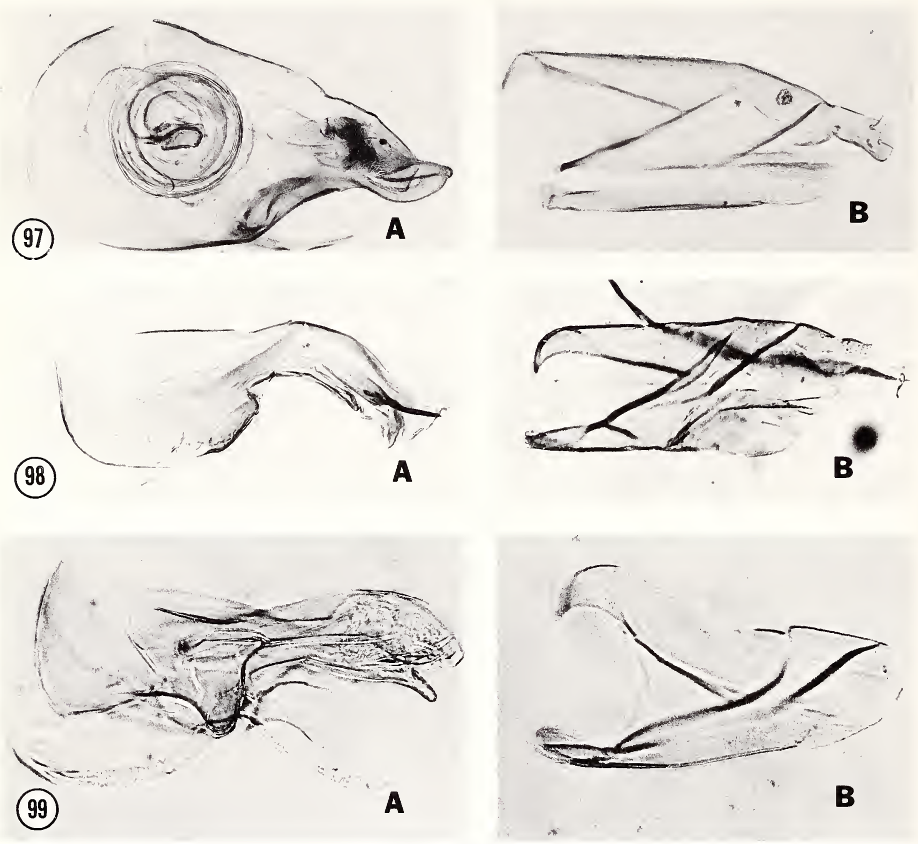
Figs. 19, 38, 62, 99, 120; Map 15

Omoschema laticeps Notman, 1920, p. 732 [type locality, Florida, Titusville]; Bernhauer and Scheerpeltz, 1926, p. 579; Arnett, 1968, p. 289; Seevers, 1978, p. 277.

Diagnosis. Lissagria laticeps is readily separated from *laeviuscula* by its allopatric southern distribution, smaller body size (<3.0 mm), deep pronotal sulcus terminating in a deep round fovea, and distinctive dorsal habitus (Fig. 19).

Description. Length 1.80–2.80 mm (N = 19; $\bar{x} = 2.30$ mm). Color light to dark ferrugineous; 1 or 2 basal antennal segments, apical antennal segment (whitish in most specimens), legs and mouthparts paler. Habitus as in Figure 19.

Head small, arcuate-truncate at base, hind angles obtusely rounded, sides subparallel. Surface moderately densely punctured; pubescence moderately dense and fine; surface between punctures smooth and shining. Eyes equal to length of temples. Antenna reaching to apex of elytra. Prothorax (Fig. 38) slightly longer than head, broadest anteriorly, narrowing and converging posteriorly; anterior angles broadly and evenly rounded; lateral margins broadly sinuate along posterior half; posterior margin evenly arcuate, very finely reflexed. Disc moderately sulcate along median line except at apex, sulcus ending in a deep, round fovea. Surface finely but densely punctured and pubescent; surface between punctures smooth and shining. Scutellum (Fig. 38) flat, simple, and densely punctured and pubescent. Elytra with surface finely and uniformly punctured and pubescent except for dense punctation near scutellum.



Figs. 97–99. Male genitalia of North American Falagriini. 97. *Aleodorus bilobatus.* 98. *Lissagria laeviuscula.* 99. *L. laticeps.*

Abdomen (Fig. 62) broad at base, slightly narrower than elytra. Terga III–V shallowly impressed at base; impression of tergum III with many obsolete punctures (Fig. 62); impressions of terga IV and V impunctate. Tergal surfaces densely and finely punctured and pubescent; surface between punctures smooth and polished.

Male. Eighth tergite with apical margin broadly arcuate at middle with comb of denticles. Eighth sternite with apical margin broadly and evenly rounded. Median lobe of aedeagus as in Figure 99A. Paramere as in Figure 99B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 120.

Type material. Holotype, with labels as follows: "Titusville, Fla., Nov 8–11"/ TYPE/"Omoschema laticeps, n.g. n.sp." The specimen is in the collection of the American Museum of Natural History, New York.

Distribution. Lissagria laticeps occurs throughout southeastern United States and is common along coastal areas from Virginia south to Florida (Map 15). Specimens have been collected from March through July.

Material examined. 37 specimens. UNITED STATES: *Florida:* Enterprise, May–June (USNM, MCZC) 13; Sand Point (USNM) 1; Highlands Co., SW shore of Lake Istokpoga, June (FMNH) 2; Dade Co., Everglades Nat'l. Park, Mahogany Hammock, June (FMNH) 2; Jacksonville, March (AMNH, FMNH) 4; Lake Istokpoga, N. L. Placid, March (CNCI) 5; Okeechobee, July (FMNH) 2; Taylor Co., 11 mi NW Steinhatchee, May (DENH) 3; Putnam Co., Welaka Exp. Sta., May (DENH) 1. *Georgia:* Clayton, 2,000–3,000 ft, June (FMNH) 1. *North Carolina:* Wake Co., Reedy Cr. S.P., May (NCSU) 1; Valley of Black Mts., July, August (AMNH) 4. *Virginia:* Jones Cr., Lee Co. (USNM) 1; Lake Drummond, June (USNM) 2.

Habitat. Specimens at hand have been taken by sifting lakeshore debris, and from berlese samples of forest floor litter and debris under pine bark.

Lissagria laeviuscula (LeConte)

Figs. 20, 30, 42, 49, 61, 75, 80, 98, 119; Map 15

Falagria laeviuscula LeConte, 1866, p. 371 [type locality, California, Fort Tejon].

Lissagria laeviuscula; Casey, 1906, p. 252; Fenyes, 1920, p. 155; Notman, 1920, p. 731; Bernhauer and Scheerpeltz, 1926, p. 579; Scheerpeltz, 1934, p. 1574; Moore and Legner, 1975, p. 414; Seevers, 1978, p. 145.

Lissagria fissilis Casey, 1906, p. 254 [type locality, California, Giant Forest, Tulare Co.].

Lissagria impressifrons Casey, 1906, p. 254 [type locality, California, Sta. Cruz Mts.].

Lissagria robusta Casey, 1906, p. 254 [type locality, California, Sta. Cruz Mts.].

Lissagria minuscula Casey, 1906, p. 254 [type locality, California, Los Angeles Co.].

Lissagria longicollis Casey, 1906, p. 255 [type locality, California, Lake Co.].

Diagnosis. This species may be distinguished from *laticeps* by the allopatric western distribution, larger adult size (most specimens greater than 3.0 mm), shallow pronotal sulcus terminating in a transverse fovea, and characteristic male and female genitalia (Figs. 98 and 119).

Description. Length 2.7–3.6 mm (N = 100; $\bar{x}$ = 3.03 mm). Color rufo-ferrugineous to dark rufo-piceous; terga VI–VIII darker; antennae, legs and mouthparts paler. Habitus as in Figure 20.

Head (Fig. 20) relatively small, broadly rounded at base, hind angles broadly rounded. Surface minutely and sparsely punctured and pubescent; surface between punctures smooth and shining. Eyes prominent, shorter than length of temples. Antenna long, nearly reaching apex of elytra. Prothorax (Fig. 20) elongate, very slightly longer than head, scarcely narrowed and converging towards base; anterior angles evenly rounded; lateral margins nearly straight or slightly sinuate; posterior margin evenly truncate. Disc distinctly sulcate along median line except extreme apex, sulcus ending in a broad, transverse impression or fovea. Surface sparsely and finely punctured and pubescent; surface between punctures smooth and polished. Scutellum large, flat, and unmodified; surface with dense asperate punctures, moderately pubescent. Elytra with surface finely and evenly punctured and pubescent, except area of extremely dense punctation adjacent to scutellum (Fig. 49); surface between punctures smooth and shining. Abdomen (Fig. 61) broad at base, nearly as wide as elytra. Terga III–V transversely impressed at base; impressions of terga III and IV with distinct, separated, coarse, but shallow punctures; impression of tergite V impunctate. Tergal surfaces with fine, asperate punctures, and finely pubescent; surface between punctures smooth and polished.

Male. Eighth tergite with apical margin broadly arcuate at middle with comb of denticles (Fig. 75). Eighth sternite with apical margin broadly rounded. Median lobe of aedeagus as in Figure 98A. Paramere as in Figure 98B.

Female. Eighth tergite and sternite with apical margin as in male. Spermatheca as in Figure 119.

Type material. Falagria laeviuscula LeConte. Holotype, with labels as follows: "Cal."/Type 6240/"F. laeviuscula *LeC.*" The specimen is in the Leconte collection of the Museum of Comparative Zoology, Harvard University, Cambridge.

Lissagria fissilis Casey. Holotype, with the following labels: "Giant Forest, Tulare Co., Cal."/CASEY bequest 1925/TYPE USNM 38929/"fissilis Csy."

Lissagria robusta Casey. Lectotype, here designated, with the labels: "Sta. Cruz Mts., Cal."/CASEY bequest 1925/TYPE USNM 38930/"robusta Csy."; my lectotype designation label is attached to it. Two paralectotypes have the same label data as the lectotype. In addition, one paralectotype has the labels: "*Cal.*" [=Monterey, Monterey Co.], while two others are labeled "Cal."

Lissagria minuscula Casey. Lectotype, here designated, with labels as follows: "Los Angeles Co., Cal."/CASEY bequest 1925/Type USNM 38932/"minuscula Csy."; my lectotype designation label is attached to it. One other paralectotype has identical labels to the lectotype.

Lissagria longicollis Casey. Holotype, with the labels: "Lake Co., Cal."/CASEY bequest 1925/TYPE USNM 38933/"longicollis Csy."

Lissagria impressifrons. Holotype, with the following labels: "Sta. Cruz Mts., Cal."/CASEY bequest 1925/TYPE USNM 38931/"impressifrons Csy."/CASEY determ., robusta-7.

Type specimens for the above five species are in the Casey collection of the U.S. National Museum (Natural History), Washington.

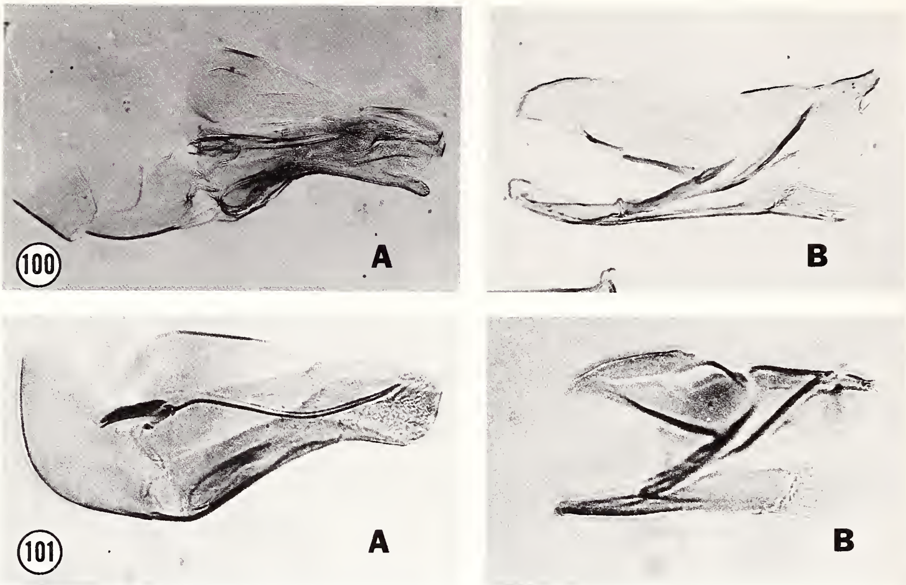
Distribution. Lissagria laeviuscula occurs throughout California, especially at high elevations (Map 15). Specimens have been collected from January through December; however, most specimens have been taken in June, July, and August.

Material examined. 678 specimens. UNITED STATES: *California:* Los Angeles Co., San Gabriel Mts., San Dimas Cyn., June, July (INHS) 113; Los Angeles Co., San Gabriel Mts., San Dimas Cyn., August, 1,200 ft. (INHS) 90; 12 mi N of Escondido, San Diego Co., September (INHS) 9; Rancho Santa Ana Bot. Garden, Claremont, September (INHS) 3; Evey Canyon, 4 mi NNE of Claremont, May (INHS) 2; Evey Cyn., Los Angeles Co., September (INHS) 3; Santa Ana Mts., Riverside Co., May, 2,000 ft (INHS) 16; Santa Ana Mts., W of Elsinor, Riverside Co., June (INHS) 15; Yosemite Nat'l. Park, August (INHS) 2; Pasadena, January, March, September, October, December (MCZC, CASC, LACM, FMNH) 31; Pasadena (AMNH) 2; Pomona Mts., May, September (MCZC, AMNH) 7; Pomona, June (MCZC, FMNH) 2; Ojai, March (MCZC) 1; Amador Co., Tiger Creek, ENE of Pioneer, 3,500 ft, June (MCZC) 33; Amador Co., 1 mi W of Pine Grove, June (MCZC) 11; Amador Co., 1.3 mi W Pine Grove, 2,200 ft, May (MCZC) 2; Amador Co., Panther Ridge, 6,200 ft, June (MCZC) 1; "S. Cal." (MCZC, AMNH, SEMC) 7; Marion Co., August (USNM) 1; Shasta Co., October (USNM) 1; Sta. Cruz Mts. (USNM, CASC, CNCI) 24; San Mateo, August (USNM) 1; Mt. Wilson, June (USNM) 1; Los Gatos (USNM) 2; Calaveras Co., Big Trees, Alt. 5,000 ft, May, July (CASC) 40; Mokel. Hill, July (CASC) 1; Cuyamaca, San Diego Co., July (CASC) 2; Mt. Wilson, 2,000 ft, May (CASC, CNCI) 7; Mt. back of Alma, September, October (CASC, CNCI) 4; Murphys, Calaveras Co., 2,500 ft, May (CASC, CNCI) 5; Julian, San Diego Co., December (CASC) 1; Calaveras Co., 3 mi NE of Glencoe, 2,000 ft, June (MCZC) 1; Huntington Lake, Fresno Co., 7,000 ft, July (CASC) 2; Fresno Co., Sierra N.F., 4.4 mi SW Big Creek, 5,400 ft, May (MCZC) 1; San Diego Co., Torrey Pines, April (CASC) 1; Calaveras Co., 3 mi NW West Point, 2,250 ft, May (MCZC) 1; Licking Fork, Mokelumne River, Calaveras Co., 2,900–3,100 ft, June (CASC) 3; Calaveras Co., Lampsons R., R.R. Flat, 1,800 ft, June (CASC) 1; Huntington Lake, Fresno Co., August (MCZC, CNCI) 11; San Diego Co., Santa Isabell, February (CNCI) 2; San Diego Co., Pine Valley, June (CNCI) 11; San Diego, Co., San Vicente Valley, June (CNCI) 1; San Diego Co., Lake Wohlford, April (CNCI) 1; Calaveras Co., Wool Hollow Cave, July (CNCI) 1; Eldorado Co., 5 mi SW of Kyburz, 4,000 ft, May (CNCI) 12; Poly Canyon, San Luis Obispo Co., October (CNCI) 68; Samual P. Taylor St. Pk., May (CNCI) 1; San Luis Obispo Co., 8 mi E of Morro Bay, June (CNCI) 1; Mariposa Big Trees, May (CUIC) 2; Giant Forest, Sequoia Nat'l. Pk., July (CUIC) 1; Riverton, 3,000 ft, July, August (AMNH) 17; Sugar Pine (AMNH, FMNH) 4; Kern Co., 1 mi W of Glenville, Poso Creek, July (AMNH) 2; Shasta Co., Shingletown, September (AMNH) 1; Mariposa Co., Back Meadows, July (AMNH) 1; San Luis Obispo Co., San Simeon, July (AMNH) 2; Tuolumne Co., Strawberry, June, July (UCBC) 8; Mariposa Co., 2 mi S of Miami Ranger Sta., 4,000 ft, July (UCBC) 2; Tulare Co., Wood Lake, December (UCBC) 1; Tuolumne Co., Cow Creek, 5 mi NE of Strawberry, July (UCBC) 3; Mariposa Co., Wawona, July, 7,000 ft (UCBC) 1; Placer Co., 2 mi W of Colfax, October (UCRC) 1; Alpine, May (UCRC) 2; Monterey Co., Redwood Gulch, August (UCRC) 1; San Luis Obispo Co., Poly Canyon, October (UCRC) 2; Sequoia Nat'l. Pk., May, August (SEMC, LACM) 3; San Bernadino Mts., Cold Creek Ranch, July (LACM) 1; L.A. River, L.A., July (LACM) 1; Modesto, February (FMNH) 1; Miami, May (FMNH) 1; Los Gatos (FMNH) 1; Butte Co., 2 mi SW Stirling City, 2,900 ft, May (DENH) 19; Butte Co., Mountain House, May (DENH) 21; Butte Co., Jonesville, 5,300 ft, May (DENH) 5; Tulare Co., Sequoia N.P., 1.8 mi and 9.2 mi S Kaweah Camp, 5,800 and 3,200 ft, May (MCZC) 5; Napa Co., 10.1 mi N Calistoga, 1,900 ft, May (MCZC) 12; state label only, June (LACM) 1; state label only (FMNH) 2.

Habitat. This species appears to prefer wet habitats. Specimens at hand have been collected from flood debris along streams, from the base of cattails, from leaf mold near a swampy area, from various leaf litter in a mixed hardwood-conifer forest and along a stream, from dry moss of a conifer log, from oak duff, and with ants.

9. *Borboropora* Kraatz

Borboropora Kraatz, 1862, p. 406; Mulsant and Rey, 1875, pp. 429, 431; Redtenbacher, 1874, p. 129; Gemminger and Harold, 1868, p. 502; Fowler, 1888, p. 147; Ganglbauer, 1895, p. 252; Everts, 1898, p. 230; Reitter, 1909, pp. 40, 74; Fenyes,



Figs. 100–101. Male genitalia of North American Falagriini. 100. *Borboropora quadriceps.* 101. *B. sulcifrons.*

1912, pp. 20, 21, 25; 1918, p. 18; 1920, p. 146; Leng, 1920, p. 124; Notman, 1920, p. 731; Porta, 1926, p. 151; Bernhauer and Scheerpeltz, 1926, p. 573; Scheerpeltz, 1929, p. 9; Portevin, 1929, pp. 253, 293; Scheerpeltz, 1930, p. 73; Bradley, 1930, pp. 85, 313; Joy, 1932, pp. 16, 39, 41; Scheerpeltz, 1934, p. 1569; Tottenham, 1949, p. 387; Blackwelder, 1952, p. 83; Horion, 1951, p. 168; Horion, 1967, p. 199; Arnett, 1968, p. 289; Palm, 1968, p. 76; Lohse, 1974, pp. 64, 67; Moore and Legner, 1975, p. 385; Seevers, 1978, p. 146.

Variant spellings: *Borbopora* Brisout, 1871, p. 140; *Borborpora* Fowler, 1888, p. 436; *Borporopora* Mulsant and Rey, 1876, p. 10.

Type-species: Borboropora kraatzi Fuss, fixed by monotypy (Kraatz, 1862, p. 406).

Pseudoscopaeus Weise, 1877, p. 8; Fenyes, 1912, p. 21; Blackwelder, 1952, p. 330.

Type-species: Pseudoscopaeus reitteri Weise, fixed by monotypy (Weise, 1877, p. 8).

Aneurota Casey, 1893, p. 347; 1906, p. 251; Fenyes, 1912, p. 21; Blackwelder, 1952; p. 52.

Type-species: Aneurota sulcifrons Casey, fixed by monotypy (Casey, 1893, p. 347).

Orthagria Casey, 1906, p. 260; Fenyes, 1912, p. 21; Blackwelder, 1952, p. 278.

Type-species: Falagria quadriceps LeConte, fixed by monotypy (Casey, 1906, p. 260).

Biology: Chabanaud, 1905, pp. 206–207 (*kraatzi*).

Diagnosis. Adults of the genus *Borboropora* are distinguished from those of other Falagriini by the large, subquadrate head (Figs. 21–22), which is longitudinally impressed at the vertex and with a longitudinal fovea or impression on the front between the eyes in many specimens, apical margin of the eighth tergite with an arcuate comb of denticles, undelimited hypomera, and area of dense punctation near the scutellum (Fig. 50).

Description. Head large, subquadrate, truncate at base, angles narrowly rounded; median line deeply impressed anterior to middle in most specimens. Neck very slender, scarcely ¼ as wide as head across eyes. Eyes rather small. Labrum (Fig. 31A) strongly transverse, angles rounded. Mandibles (Fig. 31D, E) slender, prominent, curved at apex; right mandible with 2 strong, uneven teeth at middle of inner margin; left mandible with 1 tooth at middle of inner margin. Maxilla (Fig. 31C) with galea about as long as lacinia, densely ciliate on membranous apex; lacinia with a few elongate and curved spines below apex, densely ciliate below spines. Maxillary palpus (Fig. 31C) very slender; segment 3 longer, but scarcely wider than 2; segment 4 rather long, subuliform. Mentum transverse, subtruncate in front. Ligula (Fig. 31B) bifid. Labial palpus (Fig. 31B) elongate; segment 1 very long, wider than other segments; segment 2 very short, narrower than 1; segment 3 much longer than 2. Antenna moderate in length, more or less incrassate towards apex; segments 1–3 gradually decreasing in length; penultimate segments more or less transverse; segment 11 not as long as 9 and 10 combined. Prothorax large, subquadrate, moderately narrowed at base. Disc feebly convex, finely and feebly impressed and sulcate along median line. Prosternum moderately large before procoxae, posterior margin broadly angulate. Mesospiracular peritremes large, quadrate, contiguous along median line. Mesosternal process rather broad, arcuate-truncate at apex, not quite attaining middle of mesocoxae. Metasternal process transversely convex, sinuate at apex, rather long, separated from mesosternal process by a short isthmus in most specimens. Mesocoxae rather broadly to narrowly separated. Hypomera not delimited from disc by marginal ridge. Scutellum flat, unmodified, coarsely granulose. Elytra longer and broader than prothorax, parallel-sided; area of dense, coarse punctation adjacent to scutellum. Abdomen elongate, somewhat dilated behind. Terga III–V transversely impressed at base; impressions impunctate, smooth. Apical margin of tergum VIII with arcuate comb of minute denticles.

Known species of the genus *Borboropora* are distributed in the Holarctic region. Two species occur in America north of Mexico.

KEY TO SPECIES OF *Borboropora*

1. Large, length greater than 2.2 mm; widely distributed in eastern North America .... *quadriceps* (LeConte)
– Extremely small, length under 1.4 mm; known from Florida .... *sulcifrons* (Casey)

Borboropora quadriceps (LeConte)

Figs. 21, 31, 39, 46, 50, 63, 100, 120; Map 16

Falagria quadriceps LeConte, 1866, p. 371 [type locality, New York].
Orthagria quadriceps; Casey, 1906, p. 260.

Borboropora quadriceps; Fenyes, 1912, p. 25; 1920, p. 147; Leng, 1920, p. 124; Bernhauer and Scheerpeltz, 1926, p. 573; Moore and Legner, 1975, p. 385; Seevers, 1978, p. 277.

Borboropora grandis Bernhauer, 1905, p. 21 [type locality, America borealis].

Diagnosis. This species is easily separated from *sulcifrons* by the greater body size, distinctive habitus (Fig. 21), and allopatric eastern distribution (Map 16).

Description. Length 2.25–3.3 mm (N = 36; $\bar{x} = 2.77$ mm). Body elongate, depressed; color rufo-brunneous to piceous-black; mouthparts, basal 2 or 3 antennal segments, humeral angles, apical third of elytra and legs paler in most specimens. Habitus as in Figure 21.

Head very large, subquadrate, sides parallel, straight, wider than prothorax, only slightly longer than wide, arcuate-truncate at base, basal angles acutely rounded. Surface sparsely to coarsely punctured and pubescent; frons along median line behind antennal insertions with shallow, longitudinal fovea or impression; base of vertex along median line usually distinctly impressed and sometimes excised. Eyes slightly prominent, shorter than length of temples. Antenna moderate in length, reaching basal ⅓ of elytra. Prothorax (Fig. 39) large, subquadrate, moderately narrowed behind, slightly narrower than head; anterior angles broadly, evenly rounded; lateral margins slightly sinuate posteriorly; posterior angles sometimes produced into a minute projection; posterior margin nearly straight or slightly arcuate at middle, finely margined. Disc moderately to strongly sulcate along median line except extreme apex, sulcus ending in a shallow, broad and somewhat transverse fovea. Surface finely and sparsely punctured and pubescent; surface between punctures polished and shining. Scutellum (Figs. 39, 46) broadly flattened or slightly convex, coarsely and densely punctured. Elytra with surface finely, moderately punctured and pubescent, except area of dense, coarse punctation near scutellum (Fig. 50). Abdomen broad at base, slightly narrower than elytra. Terga III–V broadly, transversely impressed at base; basal impressions smooth, shining and impunctate (Fig. 63). Tergal surfaces at apex moderately and coarsely punctured and pubescent; surfaces at base finely and sparsely punctured; surface between punctures smooth and shining.

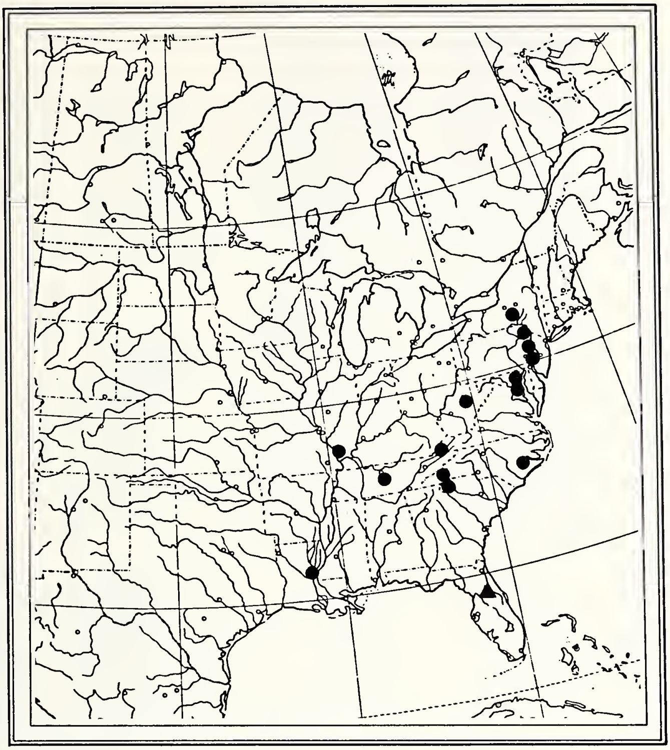
Male. Eighth tergite with apical margin broadly arcuate at middle with comb of denticles. Apical margin of eighth sternite broadly, evenly rounded. Median lobe of aedeagus as in Figure 100A. Paramere as in Figure 100B.

Female. Eighth tergite and sternite with apical margin as in the male. Spermatheca as in Figure 121.

Type material. Falagria quadriceps LeConte. Holotype, with labels as follows: "N.Y., Apl."/Type 6241/"F. quadriceps *LeC.*" The specimen is in the LeConte collection of the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Borboropora grandis Bernhauer. Lectotype, here designated, with labels as follows: "Nordamerika, leg. Pöpp. 1853"/Coll. Mus. Vind. ded. Ganglb./"grandis Bernh. Typus"/Chicago NHMus, M. Bernhauer Collection; my lectotype designation label is attached to it. The specimen is in the Field Museum of Natural History, Chicago.

Distribution. Borboropora quadriceps occurs in eastern North America, from New York south to North and South Carolina and west to Illinois and Louisiana (Map 16). Specimens have been collected from April to July, and September to October, but with most collections in July.



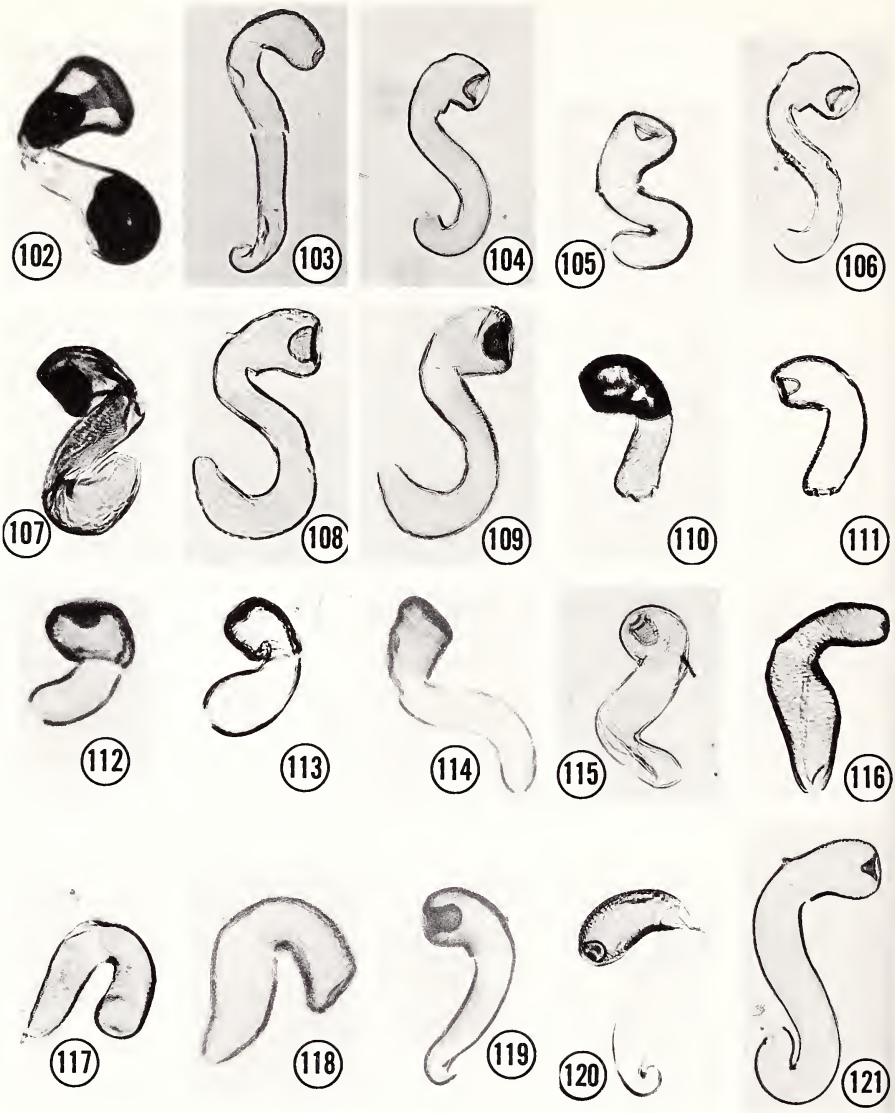
Map 16. Distribution of *Borboropora quadriceps* (circles) and *B. sulcifrons* (triangles).

Material examined. 36 specimens. UNITED STATES: *District of Columbia:* Washington, April, July (USNM) 2; D.C. (MCZC, FMNH) 2. *Illinois:* Pine Hills Field Sta., Union Co., May (CNCI) 4; Union Co., Pine Hills, nr. McCann Sprgs., May (CNCI) 2. *Louisiana:* Concordia Co., 5 mi W of Ferriday, May (CNCI) 1. *Maryland:* Jackson's Isl., June (USNM) 1; Oakland, July (USNM) 1; Deer Park, July (USNM, FMNH) 2. *North Carolina:* Maysville, October (CUIC) 1; Black Mt., September (AMNH) 1. *Pennsylvania:* Chestnut Hill, July (MCZC) 2; Wind Gap, July (CASC) 1; Camp Colang, Pike Co., July (FMNH) 1. *South Carolina:* Clemson, April (CNCI) 3. *Tennessee:* State label only (DEFW) 1. *Virginia:* Stone Cr., Lee Co. (USNM) 1; Straight Cr., Lee Co. (USNM) 1; state label only (USNM, MCZC) 5. *West Virginia:* Fort Pendleton, July (USNM) 1.

Habitat. Adults of this species have been collected from a liver trap, from the nest of a buzzard, and from the decaying carcass of a pig.

Borboropora sulcifrons (Casey)
Figs. 22, 101; Map 16

Aneurota sulcifrons Casey, 1893, p. 348 [type locality, Florida, Enterprise]; 1906, p. 252.



Figs. 102–121. Spermathecae of North American Falagriini. 102. *Cordalia obscura.* 103. *Falagriota occidua.* 104. *Myrmecocephalus cingulatus.* 105. *M. concinnus.* 106. *M. gracilis.* 107. *M. sculpturatus.* 108. *M. arizonicus.* 109. *M. gatineauensis.* 110. *M. caviceps.* 111. *M. pinalicus.* 112. *Falagria dissecta.* 113. *F. sulcata.* 114. *Falagrioma socorroensis.* 115. *Aleodorus partitus.* 116. *A. intricatus.* 117. *A. scutellaris.* 118. *A. bilobatus.* 119. *Lissagria laeviuscula.* 120. *L. laticeps.* 121. *Borboropora quadriceps.*

Borboropora sulcifrons; Fenyes, 1912, p. 25; 1920, p. 147; Leng, 1920, p. 124; Bernhauer and Scheerpeltz, 1926, p. 573; Seevers, 1978, p. 277.

Diagnosis. This species is readily recognized by its extremely minute body size.

Description. Length 1.35 mm. Body very minute; color rufo-brunneous to dark piceous; mouthparts and legs paler. Habitus as in Figure 22.

Head (Fig. 22) large, nearly quadrate, slightly longer than broad, lateral margins slightly arcuate, truncate at base, hind angles acutely rounded, prominent. Surface sparsely and minutely punctured and pubescent, strongly impressed along median line from middle of vertex to front. Eyes prominent, slightly shorter than length of temples. Antenna moderately short, feebly incrassate, not extending beyond anterior ⅓ of elytra. Prothorax nearly quadrate, much narrower than head, feebly convex, slightly longer than broad, broadest at anterior third; anterior angles broadly, evenly rounded; lateral margins rounded, moderately converging and straight to base; posterior margin broadly, evenly arcuate-truncate. Disc finely sulcate along median line except extreme apex, sulcus ending in a shallow, subbasal fovea. Surface moderately, minutely punctured and pubescent; surface between punctures smooth and shining. Scutellum flat, unmodified, densely punctured. Elytra with surface rather sparsely, evenly and minutely punctured and pubescent, except area of dense and coarse punctation near scutellum; surface between punctures smooth and shining. Abdomen broad at base, much narrower than elytra. Terga III–V shallowly, transversely impressed at base; impressions impunctate. Tergal surfaces moderately, minutely and asperately punctured and pubescent; surface between punctures smooth and polished.

Male. Eighth tergite with apical margin broadly arcuate at middle with comb of small denticles. Apical margin of eighth sternite broadly rounded. Median lobe of aedeagus as in Figure 101A. Paramere as in Figure 101B.

Female. Unknown.

Type material. Aneurota sulcifrons Casey. Holotype, in the Casey collection of the U.S. National Museum (Natural History), Washington, with the following labels: "prise [=Enterprise], .6 Fla."/CASEY bequest 1925/Type USNM 38928/"Aneurota sulcifrons."

Distribution. Borboropora sulcifrons is rarely encountered in North America. In addition to the type locality it is only known from one other locality in central Florida (Map 16). Cuban specimens have been examined that appear conspecific with those from Florida. Specimens have been collected in July.

Material examined. 1 specimen. UNITED STATES: *Florida:* Marion Co., Ocala, July (JHFC) 1.

Habitat. Little is known about the habitat of this species. One specimen at hand has been collected from a blacklight trap.

Remarks. Based upon only the two Casey descriptions of *Aneurota sulcifrons* (Casey, 1893, p. 348; 1906, p. 252), Scheerpeltz (1956) expressed the opinion that the European *Bohemiellina paradoxa* Machulka (1941) was identical with *A. sulcifrons.* Recently Smetana (1973), at the request of G. A. Lohse (Hamburg, West Germany), compared European material of *B. paradoxa* with the holotype of *Aneurota sulcifrons,* and ". . . proved beyond any doubt that *Bohemiellina* Mach. is a separate genus closely related to *Aneurota* Csy."

UNRECOGNIZED SPECIES

Falagria longicornis Sachse, 1852, p. 116 [type locality, Georgia, U.S.A.].
Falagria amabilis Sachse, 1852, p. 116 [type locality, Georgia, U.S.A.].

I was unable to locate the type material of the above two species, and characters given in the original descriptions were not sufficient to confidently place them to genus in the Falagriini.

PHYLOGENETIC ANALYSIS

Tikhomirova (1973) claimed that "Inadequate knowledge of the huge subfamily Aleocharinae, and the difficulty of diagnosing it, does not allow us to discuss in detail the kindred relationships within it. On this question it is only possible to put forward individual ideas" (translated from the Russian). Methods of phylogenetic analysis developed by Hennig (1966) are used here to produce a cladogram of probable phylogenetic relationships among the genera of the Falagriini. This analysis must remain tentative at present; with addition of taxa from other zoogeographic areas and the almost certain discovery of new taxa, details of this hypothesis will undoubtedly change.

Decisions of character polarity were determined by out-group comparison (Watrous and Wheeler, 1981). Representatives of genera of the tribe Sceptobiini (the putative sister group of the Falagriini), and of the genera *Oxypoda* (Oxypodae, Oxypodini), *Gnypeta* and *Tachyusa* (Tachyusae, Oxypodini), and *Tachinus* (Tachyporinae) were selected to represent a taxonomic out-group. Members of the tribe Sceptobiini provide out-group comparisons from a closely related group, while the taxa chosen from the Oxypodini (Aleocharinae), and *Tachinus* (Tachyporinae) provide more distantly removed comparisons. Characters and their states are listed in Table 1. The proposed phylogenetic relationships among the genera of the Falagriini are summarized in a cladogram (Fig. 122).

Distribution of the following character states support the relationships hypothesized in the cladogram. The numbers in parentheses in the following paragraphs correspond to the numbers on the cladogram (Fig. 122) and in Table 1. References to illustrations of the apomorphic character states can be found by referring to Table 1.

Head capsule. In most Aleocharinae the head capsule does not have a defined neck. Among the Staphylinidae, a narrow neck is found in some Staphylininae (*Neobisnius, Erichsonius*), Xantholininae (most genera), and Paederinae (Dolicaonina). Members of the Falagriini have an extremely narrow neck (1), a condition that is regarded here as derived.

Pronotum. The pronotum varies greatly in form and convexity in the Falagriini. It is characterized by the presence of a median sulcus (3), and is appreciably narrowed behind the middle (5). Most Falagriini have the disc deeply sulcate (4) along the median line, except in *Cordalia* and *Falagriota* where the median sulcus is only faintly visible.

Hypomera. In the Falagriini the hypomera of the prothorax is exposed and generally visible in lateral aspect. In some taxa the hypomera is undelimited from the disc—a marginal ridge is absent (9) (Figs. 42, 43). Other Falagriini have the hypomera delimited from the disc by a marginal ridge or carina (Figs. 40, 41).

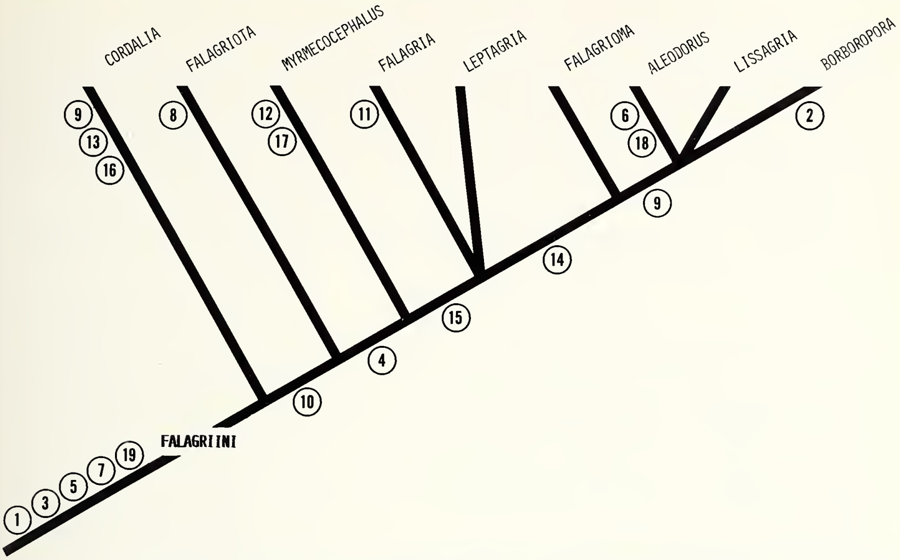


Fig. 122. Proposed phylogenetic relationships among the North American genera of the tribe Falagriini.

Mesosternum. The mesosternum (and its associated process) are on the same level or plane as the metasternum when viewed upside down. In *Aleodorus,* however, the mesosternum is on a level clearly above the metasternum (6) (Fig. 79), and the mesosternal process is very abbreviated and acute. In the majority of the Aleocharinae, the mesocoxae are set in deep acetabula conjointly formed by the meso- and metasterna; the acetabula are usually margined (Fig. 76). In the Falagriini (with the exception of *Cordalia*) the mesocoxae are not set in acetabula but are unmargined (10). Elsewhere in the Aleocharinae, unmargined acetabula occur in some termitophilous and myrmecophilous tribes (i.e., Corotocini and Dorylomimini).

Mesospiracular peritremes. In the Aleocharinae (and other Staphylinidae) the mesothoracic spiracles, which usually lie in unsclerotized membrane directly behind the front coxae, are surrounded by small, corset-like peritremes. In the Falagriini these peritremes are developed as enlarged plates which are usually heavily sclerotized and contiguous along the midline (7) (Figs. 79, 80). Among the Staphylinidae, enlarged peritremes also are found in the Tachyporinae (Tachyporini), Paederinae (Dolicaonina), Staphylininae (some Quediini), Aleocharinae (some Dorylomimini), Habrocerinae (*Nomimocerus*), Proteininae (*Megarthrus* and *Metopsia*), and Trichophyinae (*Trichophya*).

Scutellum. The scutellum is generally unmodified in most Falagriini and other Aleocharinae. It is flattened to slightly convex, and coarsely punctured. In species of *Falagria* the scutellum is distinctly bicarinate, with two median, longitudinal carinae enclosing a smooth, depressed channel (11) (Figs. 35, 44). In *Myrmecocephalus* the scutellum is unicarinate with a broad basal carina not extending to the apex, or with a fine carina extending completely to the apex (12) (Fig. 34).

Table 1. Characters and character states used in the cladistic analysis of the North American Falagriini.

Character	Plesiomorphic	Apomorphic
1. Head capsule	Neck absent, or very broad	Neck very slender (Figs. 36, 39)
2. Head capsule	Rounded or transverse	Greatly enlarged, subquadrate (Figs. 21–22)
3. Pronotum	Not sulcate along median line	Sulcate along median line (Figs. 32–29)
4. Pronotum	Very faintly or obsoletely sulcate	Deeply sulcate (Figs. 34–39)
5. Pronotum	Not narrowed behind middle	Appreciably narrowed behind middle (Figs. 34–39)
6. Mesosternum	On same level or plane as metasternum; process generalized	On level or plane ventral to metasternum; process very short (Fig. 79)
7. Mesospiracular peritremes	Very small, corset-like	Greatly enlarged and contiguous, or nearly so, along midline (Figs. 79–80)
8. Mesospiracular peritremes	Peritremes large	Peritremes reduced, moderately small (Fig. 77)
9. Hypomera	Delimited from disc by marginal ridge or carina	Not delimited from disc by marginal ridge (Figs. 42–43)
10. Mesocoxal acetabula	Completely margined posteriorly by fine ridge	Not margined posteriorly, open
11. Scutellum	Unmodified	Bicarinate (Figs. 35, 44)
12. Scutellum	Unmodified	Unicarinate (Fig. 34)
13. Elytra	Unmodified	With depression at base near humeral angle
14. Elytral punctation	Uniform throughout	Dense and coarse near scutellum (Figs. 48–50)
15. Apical margin of tergum VIII	Unmodified, truncate	Arcuate at middle with comb of minute denticles (Figs. 72–75)
16. Apical margin of tergum VIII	Unmodified, truncate	Slightly emarginate, densely fimbriate (Fig. 70)
17. Integument	Without microsculpture	With transverse or reticulate microsculpture (Figs. 64, 67–69)
18. Male genitalia	Flagellum absent, or not highly coiled	Flagellum highly coiled (Figs. 94–97)
19. Male genitalia	Velum of paramerite and condylite confluent	Velum of paramerite and condylite clearly separated

Elytral punctation. Most Falagriini have uniformly and evenly punctured elytra. In species of the genera *Aleodorus, Falagrioma, Borboropora,* and *Lissagria* the elytra are very coarsely and densely punctured near the scutellum (14) (Figs. 48–50). Elsewhere in the subfamily, this condition is not known to occur.

Tergum VIII. Most species of Falagriini have the apical margin of the eighth tergite unmodified (truncate or arcuate-truncate) in both sexes. Species of *Falagrioma, Aleodorus, Borboropora, Lissagria, Falagria,* and *Leptagria* have a distinct comb of minute denticles on the arcuate portion of the apical margin (15) (Figs. 72–75). *Cordalia obscura* has the apical margin of the eighth tergite slightly emarginate and densely fimbriate (16) (Fig. 70).

Integumental sculpture. The majority of Falagriini have a smooth and polished integument between punctures. All species of *Myrmecocephalus* (except *arizonicus*) have transverse or reticulate microsculpture on portions of the integument (17) (Figs. 65, 67–69), a feature unique among known North American Falagriini.

Median lobe of aedeagus. Undoubtedly, most of the characters useful for deducing relationships in this tribe are found in the median lobe of the aedeagus. However, most of the accessory structures (spinules, denticulate plates, etc.) of the internal sac cannot be homologized at this time. A uniquely and highly convoluted flagellum is found in species of *Aleodorus* (18) (Figs. 94A–97A) and not elsewhere in the tribe.

Paramere of aedeagus. As in other Aleocharinae, the relatively large parameres articulate with condyles distal to the median foramen of the median lobe, and each is comprised of two parts, the condylite and paramerite. The velum (probably unique to the Aleocharinae) is a distinctive element of the parameres; the condylite velum is usually confluent with the paramerite velum. However, in the Falagriini and Sceptobiini the condylite velum is clearly separated from the paramerite velum (19).

The tribe Falagriini is characterized by the synapomorphic features of: slender neck of the head capsule (1), presence of a median sulcus of the pronotum (3), appreciably narrowed pronotum behind the middle (5), usually enlarged mesospiracular peritremes (7), and separation of the velum of the paramerite and condylite of the paramere (19). The last of these apomorphic features (19) is found only in one other group, the tribe Sceptobiini, which may prove to be the sister group of the Falagriini. Some of the above apomorphic characters (i.e., 1, 7) are shared also by other staphylinid taxa (as discussed earlier), but are considered parallel developments in these groups rather than indicative of relationship.

The following cladistic analysis of the genera of the North American Falagriini has one multiply derived character state and one character reversal. In this hypothesis (Fig. 122), *Cordalia* stands as the sister of all other falagriine genera. The apomorphic features unique to *Cordalia* are the presence of a deep depression at the base of the elytra near the humeri (13), and the densely fimbriate apical margin of the eighth tergite (16). An additional apomorphic feature that supports *Cordalia* is the undelimited hypomera of the prothorax (9), which is also shared with some other falagriine genera (i.e., *Aleodorus, Lissagria,* and *Borboropora*). The sister group of *Cordalia* is supported by the unmargined posterior aspects of the mesocoxal acetabula (10). The genus *Falagriota* is recognized by the reduced mesospiracular peritremes (8), here regarded as a character reversal. The sister lineage of *Falagriota,* comprised of the genera *Myrmecocephalus, Falagria, Leptagria, Falagrioma, Aleodorus, Lissagria,* and

Borboropora, is based on the deeply sulcate pronotum (4). Species of *Myrmecocephalus* have a unicarinate scutellum (12), and an integument usually with transverse or reticulate microsculpture (17). The lineage of *Falagria, Leptagria, Falagrioma, Aleodorus, Lissagria,* and *Borboropora* is supported by the presence of a comb of denticles on the apical margin of the eighth tergite (15). Species of *Falagria* are recognized by the bicarinate scutellum (11), a feature not found elsewhere in the Falagriini. *Leptagria* is not supported by any apomorphic characters. The lineage of *Falagrioma, Aleodorus, Lissagria,* and *Borboropora* is founded on the presence of an area of dense, coarse punctation on the elytra adjacent to the scutellum (14). *Falagrioma* cannot be supported or recognized by an apomorphic character. The lineage of *Aleodorus, Lissagria,* and *Borboropora* is supported by the undelimited hypomera of the prothorax (9), an apomorphic feature shared also with *Cordalia.* The mesosternum of species of *Aleodorus* is in a plane ventral to the metasternum (6), and the internal sac of the male genitalia has a highly coiled flagellum (18), both considered uniquely derived in this lineage. Unlike *Aleodorus, Lissagria* and *Borboropora* have the meso- and metasternum on the same level. Both genera lack a convoluted flagellum. *Borboropora* has an extremely enlarged and subquadrate head capsule which is usually longitudinally impressed along the median line and sometimes excised at the occiput (2). *Lissagria* is a branch of an unresolved trichotomy, and is not supported by an apomorphic character.

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